FLIGHT

The AIRCRAFT ENGINEER & AIRSHIPS

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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CONTENTS

	PAGE
Editorial Comment	
Lympne	633
—and After	634
The Light 'Plane Meeting at Lympne	635
The Supermarine "Sea Eagle" Weathers a Gale	648
Royal Air Force	649
R.A.F. Intelligence	649
London Terminal Aerodrome	649
Air Post Stamps	650
Imports and Exports	650
Society of British Aircraft Constructors	650
Society of Model Aeronautical Engineers	650

DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:—

Oct. 18 .... "The Manœuvres of Inverted Flight," by Sq.-Leader R. M. Hill, before R.Ae.S.
Oct 26 .... "Three-Ply in Aircraft Construction," by Capt. R. N. Liptrot, B.A., before I.Ae.E.
Nov. 1 .... "Present Developments in Aircraft Instruments," by Major Wimperis, before R.Ae.S.
Nov. 9 .... "Soaring Flight," by Dr. E. H. Hankin, before I.Ae.E.
Nov. 15 .... "The Thermodynamics of Aircraft Engines," by Mr. H. R. Ricardo, before R.Ae.S.
Nov. 29 .... "Airmanship at Sea," by Sqd.-Ldr. Maycock
Nov. 30 .... "The Result of Twelve Years' Welded Tube Construction and the Development of Cantilever Wings," by A. H. G. Fokker, before, I.Ae.E.
Dec. 1 .... Entries close for French Aero Engine Competition
Dec. 9 .... "Water-Cooled Aero Engines," by A. J. Rowledge, before I.Ae.E.
Dec. 13 .... "Air Strategy," by Wing Cmdr. Edmonds
Dec. 14 .... "Leader Cable Systems for Electrical Steering of Aeroplanes," by J. Gray, before I.Ae.E.

1924

Jan. 10 .... "Materials from the Aeronautical Point of View," by Dr. Aitchison and Mr. North
Jan. 24 .... "Fabric and Dopes," by Dr. Ramsbottom

EDITORIAL COMMENT.

THE thanks of the aviation community in particular, and of the Nation generally, are due to His Grace the Duke of Sutherland, who, having realised the possibilities of the light 'plane, was the first public man in this country to give encouragement by offering a substantial prize with the object of developing this type of flying machine. The other donors of prizes, the *Daily Mail*, Abdulla and Co., Sir Charles Wakefield, and the S.M.M.T. and B.C.M.C.M.T.U., who followed the splendid example set by the Duke of Sutherland, enabled the amount of prize money to be so enlarged as to bring in a splendid entry list. To all thus concerned every credit and appreciation is also due.

Lympne

The outstanding performances of the meeting are not easy to sort out from such an excellent average as that established at Lympne. The two machines that tied for the two major prizes for fuel economy are both outstanding examples of the aeroplane designer's art. The "Wren," with its diminutive engine, is amazingly good both in performance and in stability and controllability. The A.N.E.C. monoplane touched wider extremes than any other machine at the meeting. Its economy was equal to that of the "Wren," although the Blackburne engine is of 700 c.c. capacity as compared with the 398 c.c. of the "Wren's" A.B.C. It attained the greatest altitude of the meeting, and it was but 2 m.p.h. slower than the winner of the speed competition, the Parnall "Pixie," which had much smaller wings. During the whole of the meeting the only work done on the A.N.E.C. monoplane was the changing of sparking plugs. We think this is a performance with which Mr. Shackleton, the designer of the A.N.E.C., may well be satisfied, as a start.

Hinkler's total mileage of 1,000 miles on the Avro monoplane, with 700 c.c. Blackburne engine, was an equally fine performance, and is, perhaps, of greater practical value than extreme economy. In the whole of that 1,000 miles flight Hinkler did not have a single forced landing, a fact that must remain as a great testimonial to the Blackburne engine.

Macmillan's speed "record" of 76·1 m.p.h. on the Parnall "Pixie," with 500 c.c. Douglas, definitely

proved that the light 'plane with small engine can be made quite a fast craft without sacrificing safety, whilst even with its small wings, the "Pixie," which handles extremely well, has a very good climb.

The de Havilland machines, although not securing any prizes in the competitions, proved themselves extraordinarily airworthy, and have the distinction of being the only light 'planes to be looped and rolled, thus proving that it is possible to provide adequate strength even in these small machines. Many of the other machines entered were never given a chance of showing what they can really do, owing to refractory engines. When certain changes in power plant have been effected we are sure more will be heard of several of these machines.

A case in point is the Gloucestershire "Gannet," the two-stroke engine of which was an experimental type, and which time had not allowed of getting thoroughly tested out before the meeting. Fitted with a different engine, or when the two-stroke has got through its present troubles, the "Gannet" should give a good account of itself and prove a thoroughly handy little machine.

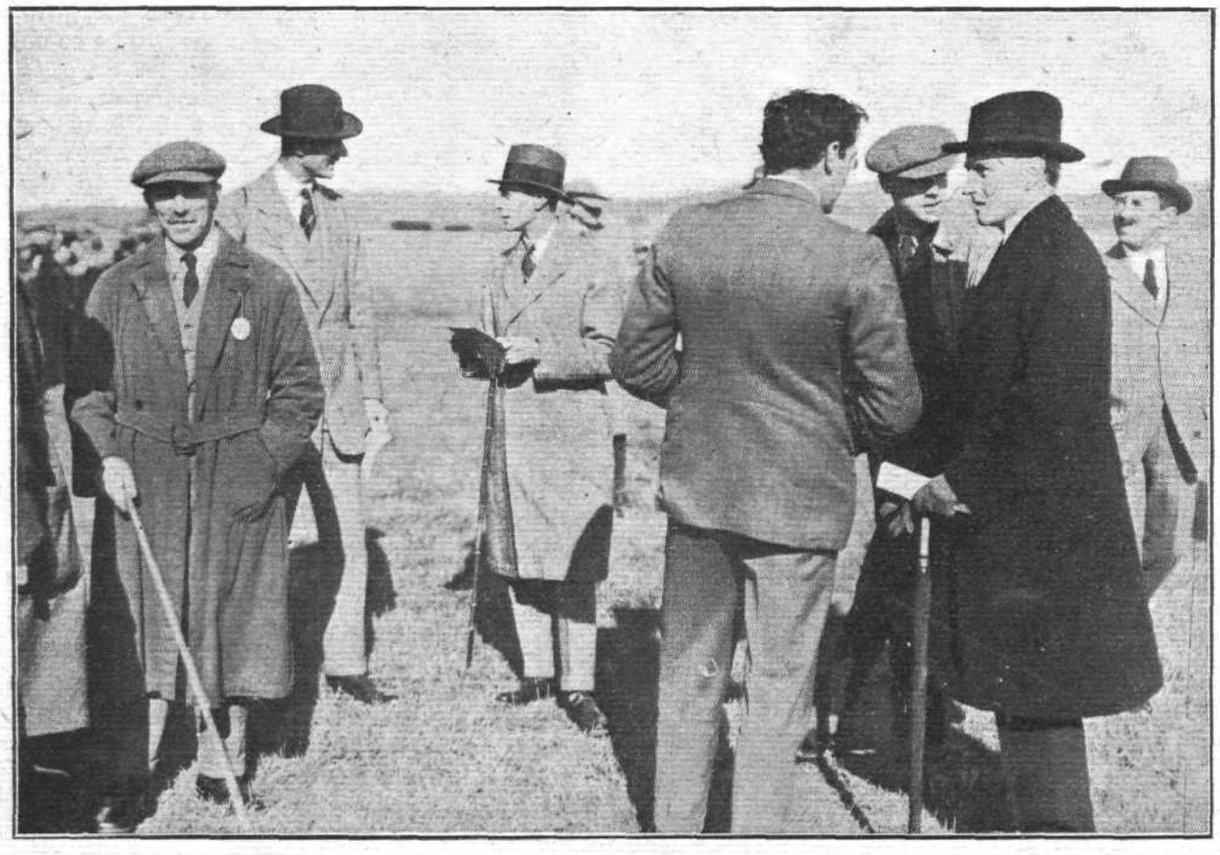
◆ ◆ ◆

—and After Several things may be said to have been established as a result of the Lympne meeting. The number of forced landings without damage proved that the light 'plane is relatively easy to land even in difficult country. As to the performances attained, these indicate that it is possible to make light 'planes fly quite strongly with motor cycle engines, and thus great promise for the future is held out.

The only drawback at the moment seems to be that of first cost. When, however, special forms of construction have been evolved, and the light 'plane is being turned out in quantities, this trouble will speedily be remedied. At present it looks as if the worst offender in the measure of cost is the item of erecting. The actual making of the components is not so costly. What runs away with the money is putting the parts together—in order words, erecting.

The economy and safety of the light 'plane having been demonstrated, it now remains to be seen what use can be made of this new type of aircraft. This in itself is a subject for a lengthy article, so that at present we must be content to express the opinion that there is a great future for the light 'plane as a private touring machine. Another field, and a very important one, that suggests itself is the equipment of the R.A.F. and R.A.F. Reserve with light 'planes in great numbers, not only for initial training, but for providing officers with extensive and constant flying practice at relatively insignificant cost to the country. The machines at Lympne showed that a complete range can be obtained, from the most sedate and "fool-proof" machine to the most sensitive. It should thus be possible, by a suitable choice of types, to provide a nicely graduated series of steps in flying that should reduce crashes to a minimum. Other uses might be indicated, but space does not allow elaboration of detail this week.

In conclusion thanks are due to the Royal Aero Club for the excellent organisation that characterised the whole meeting, and the scrupulous fairmindedness which attached to the running of the competitions.



SATURDAY AT LYMPNE: A number of distinguished personalities paid a visit to the light 'plane meeting on the last day. Our group includes, from left to right, Mr. C. C. Walker, Chief Engineer of the de Havilland Aircraft Co., General Festing, H.R.H. the Duke of York, Mr. Frank Courtney, the Duke of Sutherland, Sir Samuel Hoare, and General Sir Sefton Brancker.

FLIGHT

THE LIGHT 'PLANE MEETING AT LYMPNE

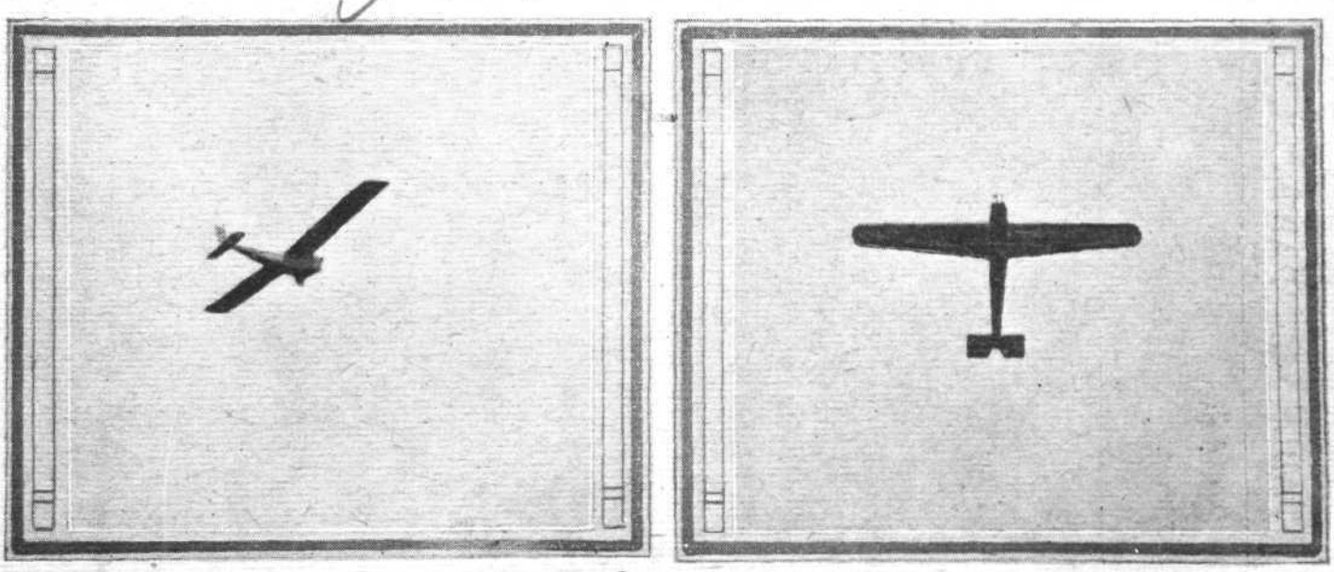
All Prizes Won by British Competitors

THE first meeting for light aeroplanes to be held in Great Britain has come to an end, and some very remarkable results have been attained. The weather throughout was none too good, otherwise the figures for mileage per gallon, speed, number of circuits completed, and altitude might have read even better than they do. On the other hand, the unsettled weather conditions provided an opportunity of showing that these low-power machines are by no means the fine-weather craft that many had expected, and consequently it is not at all certain that the bad weather was not really a blessing in disguise, for all the grumbling that it naturally caused. Most people believed that these light machines, fitted with motor-cycle engines, might fly after a fashion, at any rate in a calm or in moderate winds. A few inclined to think that they would fly fairly strongly, but nobody, it is fairly safe to suppose, had realised that the low-power aeroplane could fly, and fly very strongly indeed, in winds that were distinctly worrying to large and powerfully-engined craft.

That the airworthiness of the machines was demonstrated over and over again was, of course, due in the main to the exceptionally fine piloting, and it would be futile to argue that the machines could have been flown safely under the same weather conditions by beginners. Nevertheless, the capacity of the type having been demonstrated by highly-skilled pilots, the natural development will be towards "fool-proof" qualities that will enable anyone with average "hands" to fly light aeroplanes with at least as great safety as that of a motor-bicycle on the roads of today, and probably with considerably greater safety. That an unfortunate structural breakage should have occurred to mar the proceedings is extremely regrettable on account of the probable effect it will have on the general public, who cannot be expected to differentiate between the structural weakness of an individual machine and the strength of the type as a class.

From the latter point of view the performance of Capt. Broad in looping, rolling, and generally "stunting" the D.H. monoplane, No. 8, after the regrettable crash of Maneyrol, is to be commended, as it provided an excellent demonstration of the strength and manœuvrability which it is possible to provide in a machine of the light 'plane class without sacrificing other qualities. We are not in favour of "stunting" for its own sake, and have frequently condemned it in FLIGHT, but an inexperienced pilot might very easily inadvertently get his machine into a position in which exceptional stresses were thrown on the structure, and it is well that a skilled pilot should

TWO PRIZEWINNERS AT LYMPNE : Mr. J. H. James, who tied with Flight-Lieut. Longton for the Duke of Sutherland's and the "Daily Mail" prizes, and Mr. M. Piercey, winner of the altitude prize offered by Sir Charles Wakefield. Owing to trouble with the engine on the second A.N.E.C. monoplane both pilots did most of their flying on the famous No. 17.

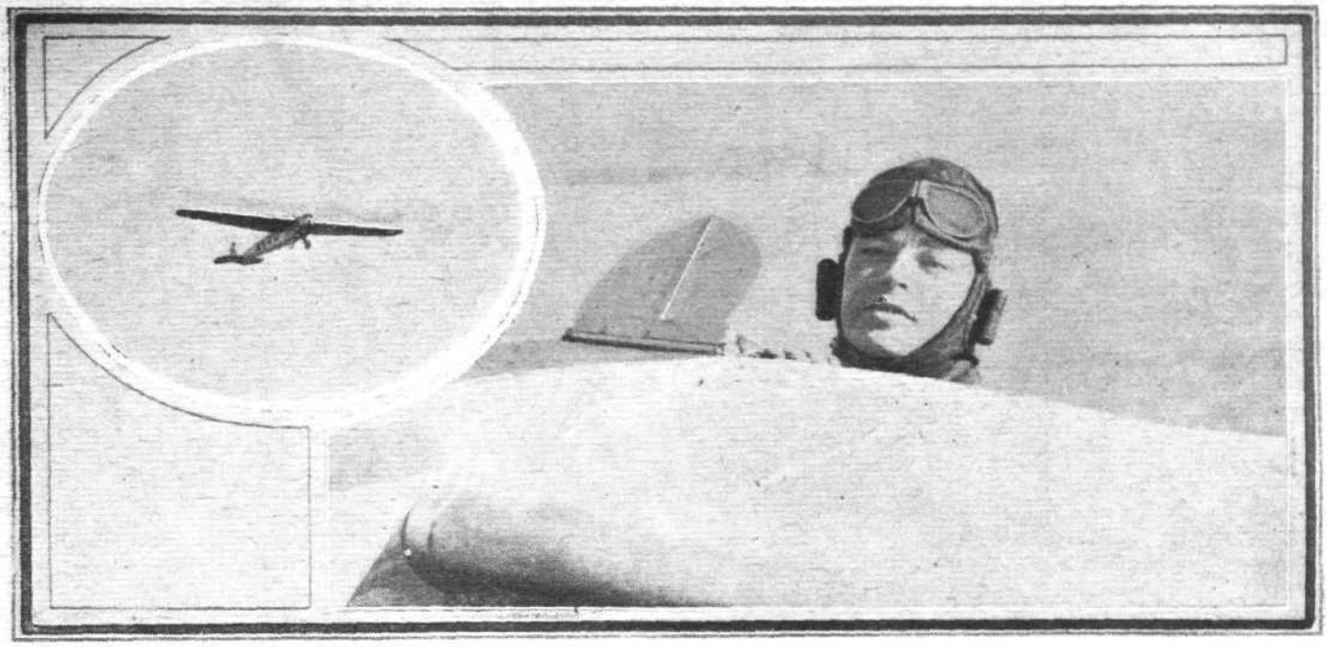


TWO PRIZE-WINNERS AT LYMPNE : On the left, James's A.N.E.C. mnoplane (No. 17), on which he tied with Flight-Lieut. Longton, flying the "Wren" No. 4 (seen on the right), for the Duke of Sutherland's and the "Daily Mail" prizes.

TABLE OF PARTICULARS, ETC., OF MACHINES ENTERED FOR LYMPNE COMPETITIONS

No.	Entrant.	Constructor.	Pilot.	Type.	Engine.	Length o.a.	Span.	Wing Area.	Weight Empty.	Weight Loaded.	Wing Loading.	Consumption (miles per gal.).	Speed (m.p.h.).	No. of Circuits (12·5 miles each).	Altitude (feet).
						ft. in.	ft. in.	sq. ft.	lbs.	lbs.	lbs./ sq. ft.				
1	Grigg Motor Co. ..	Grigg Motor Co. ..	—	B	Grigg	—	—	—	—	—	—	—	—	—	—
2	Major Gnosspelius	Short Bros. ..	Parker	M	700 c.c. Blackburne	19 6	36 4	157	360	540	3·43	—	—	—	—
3	English Electric Co.	English Electric Co.	Wright	M	400 c.c. A.B.C...	24 3	37 0	150	232	420	2·75	82·5	—	14	—
4	,, ,, ,,	,, ,, ,,	Longton	M	400 c.c. A.B.C...	24 3	37 0	150	232	420	2·75	87·5	—	29	—
5	A. V. Roe and Co.	A. V. Roe and Co.	Hinkler	B	— c.c. B. and H.	19 6	30 0	166	294	480	2·89	—	—	—	—
6	,, ,, ,,	,, ,, ,,	Hinkler	M	700 c.c. Blackburne	21 0	36 0	138	285	470	3·40	63·3	—	80	—
7	Gloucestershire Aircraft Co.	Gloucestershire Aircraft Co.	Carter	B	750 c.c. Carden ..	16 8	18 0	103	283	460	4·46	—	—	—	—
8	De Havilland Aircraft Co.	De Havilland Aircraft Co.	De Havilland and Broad	M	750 c.c. Douglas	19 8	30 1	120	310	490	4·08	50·8	—	8	—
9	Geo. Parnall and Co.	Geo. Parnall and Co.	Macmillan ..	M	500 c.c. Douglas	—	—	—	—	—	—	53·4	—	10	—
10	Vickers	Vickers	Cockerell ..	B	750 c.c. Douglas	17 3	25 0	200	400	580	2·9	—	58·1	4	—
11	G. S. Bush and Capt. Hamersley	A. V. Roe and Co...	Hamersley ..	B	500 c.c. Douglas	19 6	30 0	166	294	480	2·89	—	—	4	13,850
12	A. S. Butler ..	De Havilland Aircraft Co.	Hemming ..	M	750 c.c. Douglas	19 8	30 1	120	310	490	4·08	59·3	57·5	30	—
13	F. P. Raynham ..	Air Navigation Co.	Raynham ..	M	750 c.c. Douglas	19 2	30 0	135	—	—	—	65·7	—	13	—
14	R.A.E. Aero Club..	R.A.E. Aero Club..	Bulman ..	M	600 c.c. Douglas	16 0	23 0	80	375	565	7·05	—	58·5	2	—
15	L. Peyret	L. Peyret	Maneyrol ..	M	750 c.c. Sergant	18 3	32 4	164	330	515	3·14	—	—	—	9,400
16	J. B. Richard ..	—	De Lettenhove ..	M	750 c.c. Sergant	21 6	36 6	215	—	—	—	—	—	—	—
17	Addlestone Aeron. Assn.	Air Navigation Co.	James and Piercey	M	700 c.c. Blackburne	15 7	32 0	145	290	470	3·25	87·5	74	62	14,400
18	H. Blundell ..	,, ,, ,,	Piercey	M	700 c.c. Blackburne	15 7	32 0	145	290	470	3·25	56·7	—	11	—
19	Major Gnosspelius	Short Bros. ..	Stocken ..	M	700 c.c. Blackburne	19 6	36 4	157	360	540	3·43	—	55·25	3	—
20	P. W. Kingwell ..	P. W. Kingwell ..	Sykes	TM	400 c.c. A.B.C ..	—	—	—	—	—	—	—	—	—	—
21	G. A. de Ro ..	—	Simonet ..	M	750 c.c. Sergant.	21 6	36 6	215	—	—	—	—	58	6	—
22	L. Peyret	L. Peyret	Maneyrol ..	M	750 c.c. Douglas	—	—	—	—	—	—	—	—	—	—
23	Pointing and J. T. Jeyes	Handley Page, Ltd.	Pointing and Jeyes	M	500 c.c. Douglas	18 6	36 0	168	300	480	2·86	—	—	—	—
24	Geo. Parnall and Co.	Geo. Parnall and Co.	Macmillan ..	M	750 c.c. Douglas	—	—	—	—	—	—	—	76·1	—	—
25	Major Bradshaw ..	Handley Page, Ltd.	Barnard ..	M	400 c.c. A.B.C...	17 0	36 0	157	250	430	2·74	—	—	3	—
26	Handley Page, Ltd.	Handley Page, Ltd.	Olley	M	750 c.c. Blackburne	17 0	20 0	62	320	500	8·06	—	—	—	—
27	Percy Salmon ..	—	Bouchier ..	—	—	—	—	—	—	—	—	—	—	—	—
28	Falcon Aircraft Co.	Falcon Aircraft Co.	—	M	—	—	—	—	—	—	—	—	—	—	—

B = Biplane; M = Monoplane; TM = Tandem Monoplane.



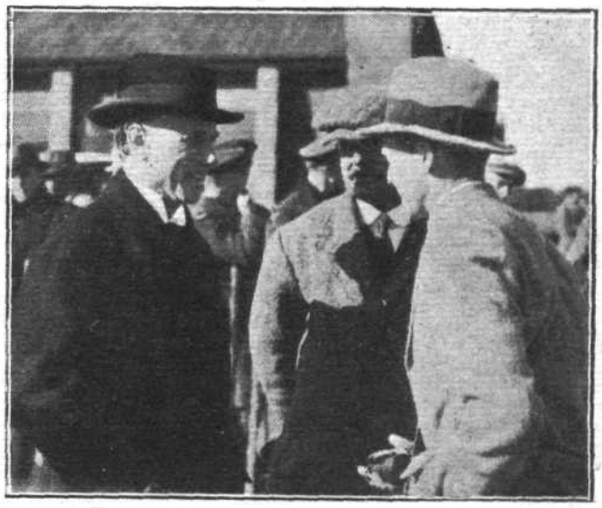
1,000 MILES AROUND LYMPNE : Mr. Bert Hinkler in his Avro monoplane, 700 c.c. Blackburne engine, at the completion of his 80 laps of the course. Inset, the machine crossing the finishing line at the end of the 80th lap. During the whole week Hinkler did not have a single forced landing.

ascertain quite early in the life of a type whether or not the calculated strength is really there. This Capt. Broad effectively did, and thus must have done a great deal, much more probably than can yet be realised, to prevent from taking root among the spectators present any idea that a light aeroplane is *necessarily* a flimsy affair.

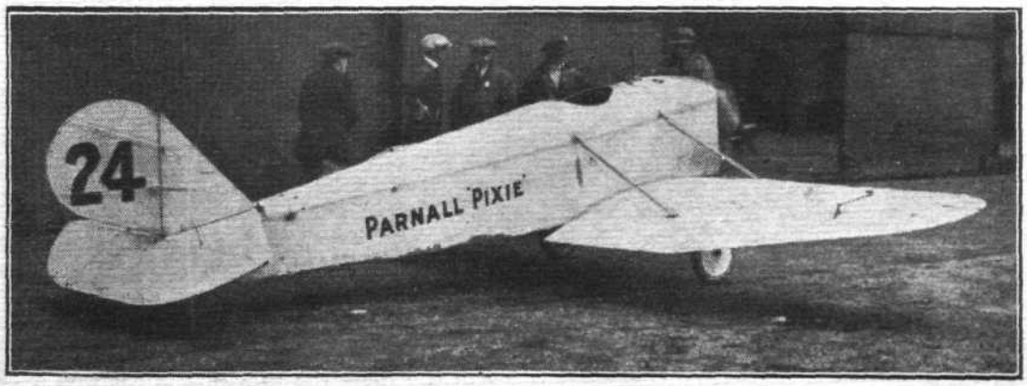
Thursday, October 11

However, to return to the doings of the Lympne meeting : Last week we were able to record the performances of the first three days, and thus it becomes necessary to take up our narrative of the rest of the week's doings at the morning of Thursday, October 11. The morning was much better than had been the two preceding days, and the visibility was fairly good during the earlier part, although later on clouds and wind and rain interfered with the flying. A number of machines made flights during the day, of which the two most notable performances were the speed "record" of 76·1 m.p.h. established by Macmillan on the Parnall "Pixie II," which, as a matter of fact, is the "Pixie I" with smaller wings and a 750 c.c. Douglas in place of the larger wings and 500 c.c. Douglas. The machine appears to be extraordinarily fast, and might be described as a miniature "Gloster." Its actual speed must be considerably greater than the average attained around the course.

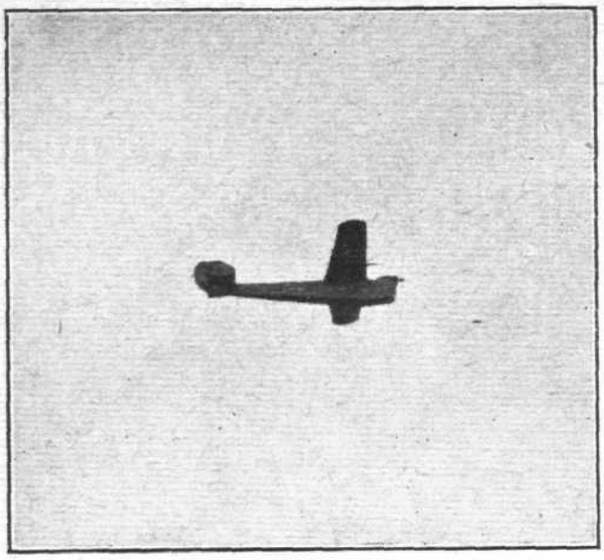
The R.A.E. Aero Club monoplane (No. 14), the "Hurricane," also came out for speed tests, but did not look anything like as fast as the "Pixie." When the speed was announced it was found to be only 58·5 m.p.h. The machine appears to be undersurfaced and flies with its tail down. The engine is a special 600 c.c. Douglas, with a terrific compression, and when it is started it sounds like a battery of machine guns. It appears likely that somewhat better results might have been obtained if the wing had been set at a larger angle to the fuselage. As it is, it appears that the fuselage is dragging through the air at a considerable angle, and as it is of triangular section it would seem that it must disturb the air to quite a considerable extent. The undercarriage is similar to that of the very early Nieuports, and consists of a steel leaf spring carrying the wheels.



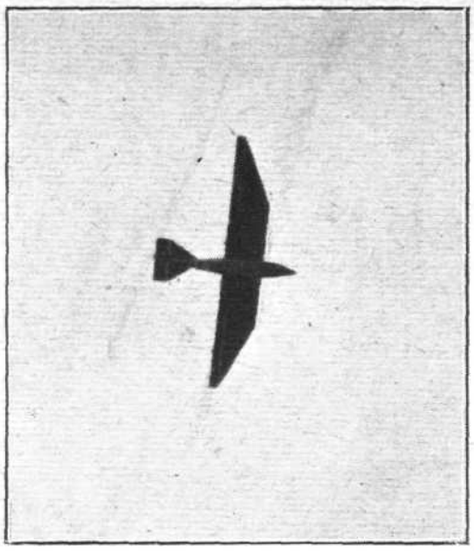
THE AIR MINISTER AT LYMPNE : Sir Samuel Hoare in conversation with the Director of Research, General Bagnall-Wild, and with Mr. W. S. Shackleton, the designer of the A.N.E.C. monoplanes.



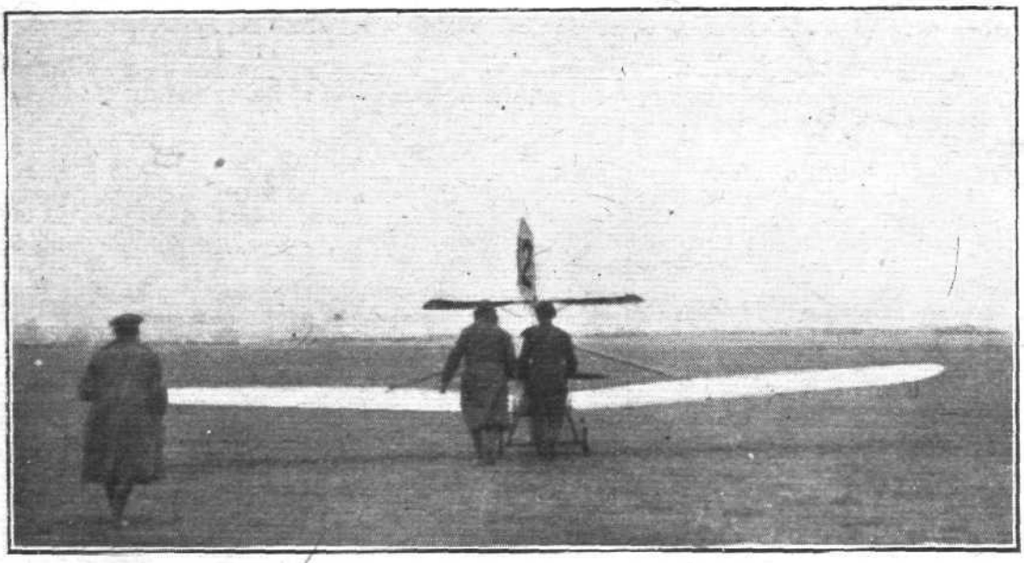
76.1 m.p.h.: The Parnall "Pixie II," on which Capt. Macmillan won the Abdulla speed prize of £500 at Lympne. A photograph of "Pixie I," which has larger wings and a smaller engine, was published last week.



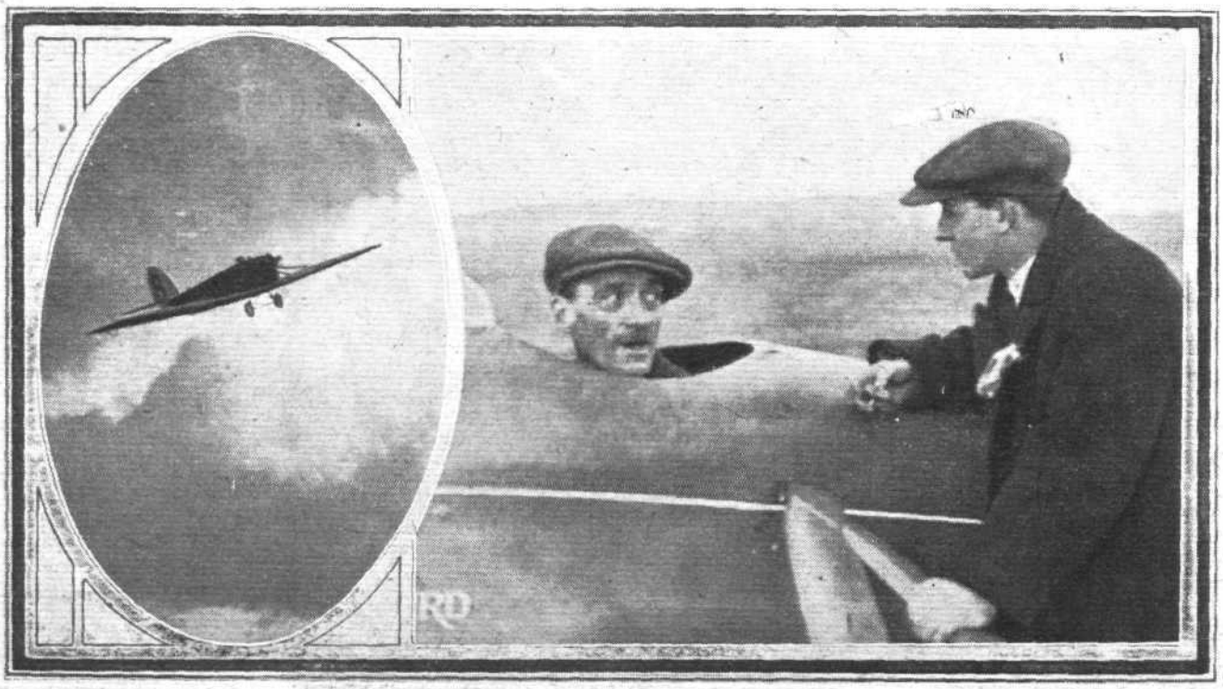
THE AMAZING "WREN": Major Wright flying No. 3 at Lympne.



Plan view from below of the Gnosspelius "Gull" flying over Lympne aerodrome.



Perfectly Simple: Major Hemming and an assistant at Lympne wheeling out the de Havilland monoplane "Sylvia II" by holding on to the propeller and letting the tail rise off the ground.



AIR-COMMODORE C. A. H. LONGCROFT TRIES THE DE HAVILLAND LIGHT 'PLANE: Our photograph shows the Commodore discussing the machine with Capt. Broad, while in the inset the machine is seen on a pretty banked turn. The machine was also flown by Wing-Commander Pretyman.

HEELING OUT THE GLOUCESTERSHIRE "GANNET": Engine trouble prevented the "Gannet" from taking part in the competitions. The inset shows the machine taking off for a flight.

During the day Longton on No. 4 "Wren" succeeded in improving his previous mileage per gallon of petrol from 85·9 to 87·5 miles per gallon, or exactly the same as that attained by James on the A.N.E.C. monoplane. Thus fresh interest was added to the competition for the two largest prizes, the Duke of Sutherland's £500 and the *Daily Mail* £1,000, and it was a matter for speculation whether these figures would be improved upon before the close of the meeting.

Maneyrol brought the Peyret monoplane, No. 15, out during the morning and made the circuits necessary for qualifying for entry in the various competitions. The Peyret did not appear to be very fast, but the engine sounded well, although probably not running at anything like full power.

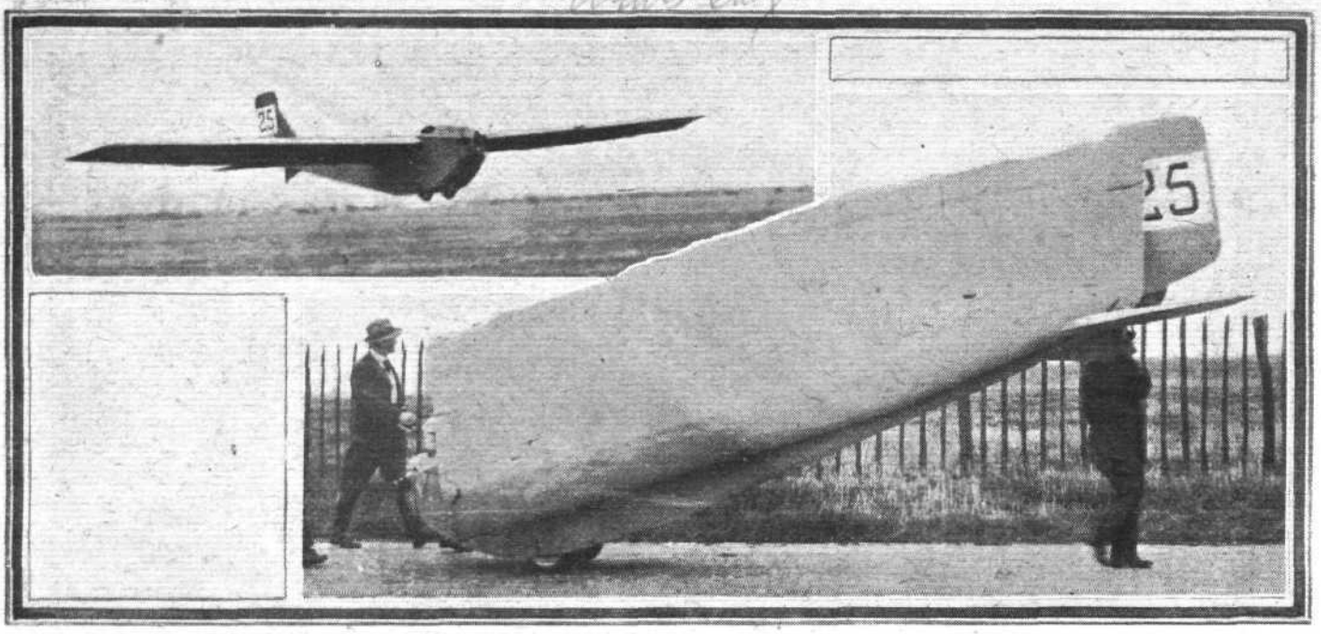
Hinkler continued his "lapping" during the day, and increased his total to 74 laps, corresponding to a distance of 925 miles. It was estimated that at the speed and fuel consumption at which he had been flying this distance would correspond to a flight from London to Rome at a cost of somewhere in the neighbourhood of £1 for petrol. Naturally, to this should be added a certain amount for wear and tear and depreciation, but the flight did show that touring by light aeroplane in the future should be within the reach of people of even quite moderate means. Incidentally Hinkler made a non-stop flight of 125 miles by covering 10 laps of the course without landing.

Mr. C. R. Fairey discusses the latest phase of aviation with the Duke of Sutherland, to whose initiative in first offering a prize for light 'planes a great proportion of the success of the Lympne meeting is due.

In the afternoon several machines were out. Squadron-Leader Wright on No. 3 "Wren" increased his mileage to 82·5 m.p.g. by a flight of eight laps, which brought his total number of laps up to 14. James on No. 17 improved upon his speed over the course from 66·6 m.p.h. to 74 m.p.h. In the lapping he was now a good distance behind Hinkler, with a total of 59 laps, or a distance of 737·7 miles. An attempt on the A.N.E.C. monoplane to improve upon the consumption was brought to a close by the rain, which prevented James from finding his way around the course after he had covered six of the eight laps necessary to better his previous performance of 87·5 m.p.g.

The Sayers-Handley Page monoplane (No. 25), which passed its transport tests on the day before, came out during the afternoon. In this machine the pilot is totally enclosed, the only view he obtains being through two small openings in the roof of the fuselage. When sitting in a normal position he

The Vickers "Viget" at Lympne: Wheeling the machine out for a flight. Note the pilot's name painted on the side of the fuselage.

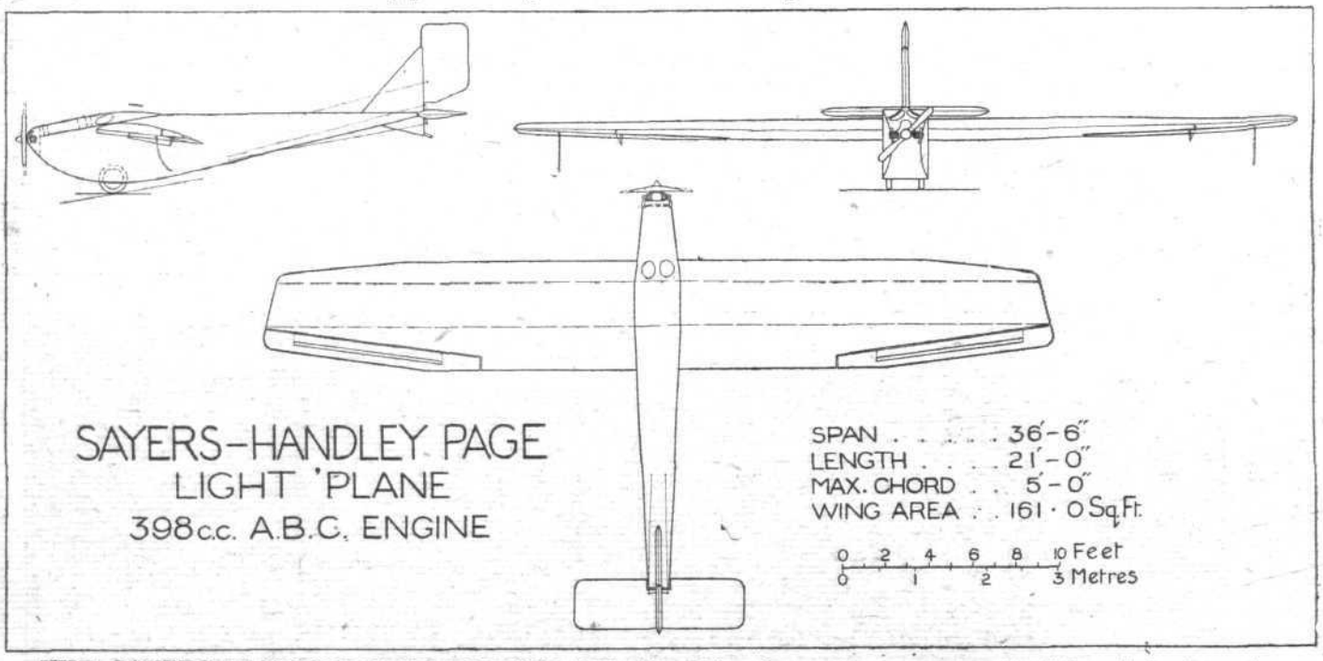


THE SAYERS-HANDLEY PAGE MONOPLANE PASSES HER TRANSPORT TESTS AT LYMPNE: Inset, the machine in flight. Note the small opening in the roof through which the pilot is supposed to look. The addition of a periscope to the equipment of this machine seems to be called for.

can see two bits of sky, but for looking down at any sort of an angle so as to see the ground he has to cock his head on one side, looking through one of the openings. How Olley was able to find his way around the course is a mystery, and probably it was just as well that there were not at the time very many machines in the air. The machine was "bunjied" off, and seemed to fly fairly well, although it wobbled a good deal. The engine was obviously not running well, and the somewhat erratic flying may have been due to the pilot being busy with his engine controls. After completing three laps of the course Olley was forced to land, his engine constantly losing "revs." although he had the throttle wide open. When the machine was brought back it was found that the pillar carrying the rockers of one of the cylinders had worked loose. Judging from the amount of fuel used during the three laps and a bit, and taking into consideration that the engine had been running badly practically the whole time, it appeared that the fuel economy would have been extremely good had Olley been able to complete the necessary number of laps.

Forced landings were the order of the day, but it speaks well for the light aeroplane as a class that in no instance did damage to either man or machine result. The R.A.E. Aero Club's monoplane, the "Hurricane," was among those forced to land, a broken rocker arm having put the engine out of commission for the time being. She was, however, put down safely by Flight-Lieut. Bulman. Mr. Maurice Piercey had to make a forced landing on one of the A.N.E.C. monoplanes, owing to a sooted plug. He borrowed a spanner from a passing motor-cyclist, and, after having cleaned the plug, resumed his flight, the motor-cyclist swinging his propeller and keeping inquisitive cows away from the machine. Mr. Piercey later stated that it was quite a pleasure to force-land on the A.N.E.C.

It is of interest to state, and is a fine testimony to the Blackburne engine, that although forced landings have had to be made on one or two occasions by machines fitted with this engine, the trouble has usually been nothing worse than sooted plugs. On the A.N.E.C. the change of plugs was the only one made to this engine, while Hinkler's Avro monoplane got through without a single forced landing. Whether this is due to the fact that the engine in this machine is mounted normally, while in the A.N.E.C. it is inverted, is difficult to say. It seems unlikely that the inverted position, with the altered oil channels, should be any worse, and probably the freedom from plug trouble enjoyed by Hinkler's engine is due to other causes. In the Gnosspelius "Gulls" the Blackburne engine seems to have been least happy. This may be due to the position of the engine in the centre section of the wing.



THE SAYERS-HANDLEY PAGE MONOPLANE (No. 25): General arrangement of drawings to scale.

In spite of bad weather in the afternoon a number of distinguished visitors had gathered to watch the flying, and to examine such machines as were being overhauled in the hangar. Among them were the Duke and Duchess of Sutherland, Lord Edward Grosvenor, Lady Louis Mountbatten, and Lieut.-Col. Moore-Brabazon. The latter was very interested in Mr. A. V. Roe's little two-wheeled cycle-car, on which he made a trial "flight" in drizzling rain. The rider is, however, well protected in this machine, a wide front shield keeping off most of the rain.

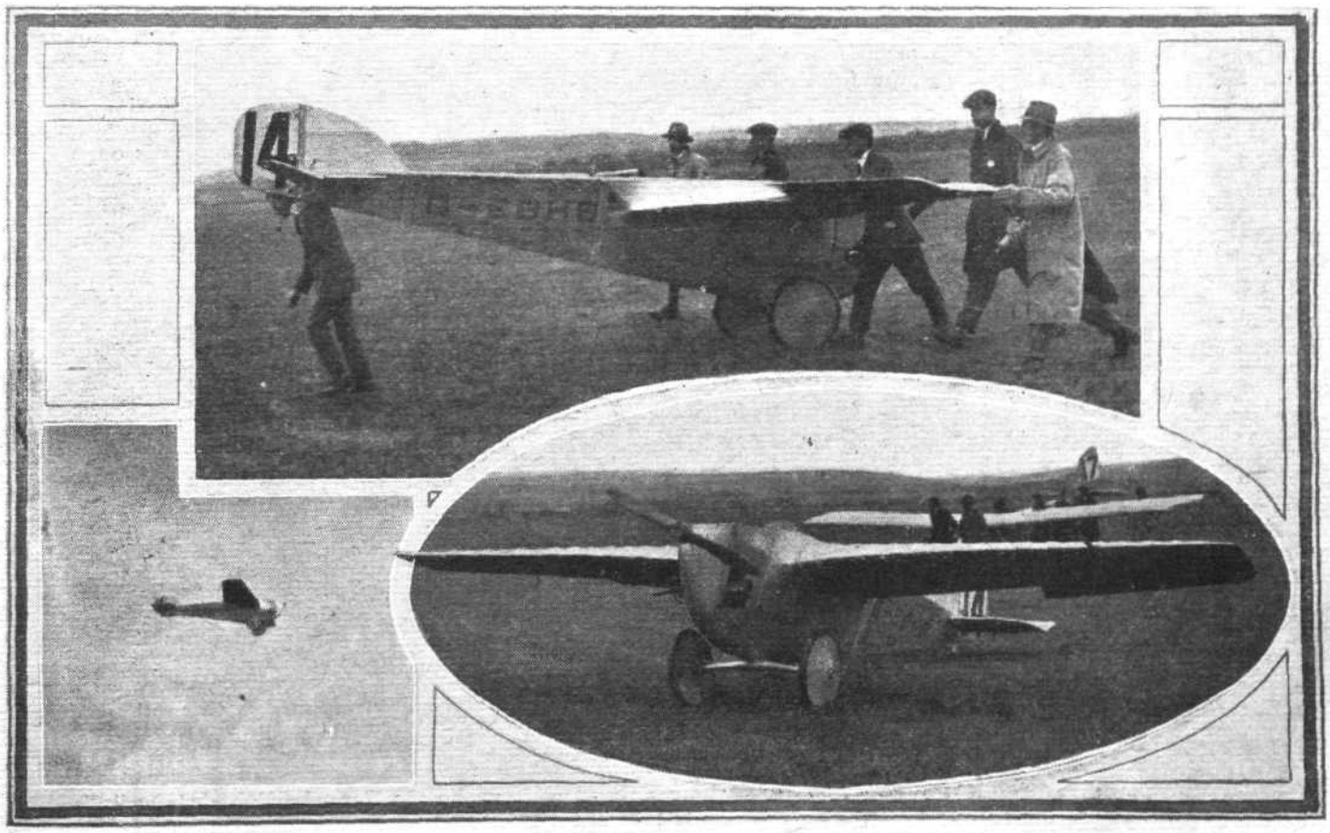
Friday, October 12

During the latter part of Thursday the weather got steadily worse, and the officials decided to close down about an hour before the usual time, as it was obvious that no flying could be done. Things did not promise well for the morrow, and when Friday morning came rain and wind were the order of the day. As the hours passed the weather got worse and worse, and all the competitors, realising that there was little likelihood of improvement, turned their attention to overhauling engines, decarbonising cylinders, cleaning sparking plugs, and grinding-in valves. Carburettors were tried and discarded in the hunt for economy. It is to be feared that many a good carburettor lost its reputation at Lympne; often no doubt because the experimenters were not specialists in this class of work and had no experience of motor-cycle carburettors, but in many cases due to the entirely different conditions under which the carburettor has to work in an aeroplane.

The machines themselves did not appear to require much attention. A few competitors were busy doping strips of fabric over the cracks between ailerons and rear spars, their activity being reminiscent of Itford last year, when this was a favourite pastime among competitors. It was interesting to examine the way in which the fabric of the wings had or had not withstood the extensive flying in mist and rain during most days of the meeting. "Soggy" wings were far less frequent than might have been expected, but three-ply seemed to fare worse. On nearly all the machines in which this material was employed for covering the fuselage it was found to have buckled in a very unsightly manner. No doubt this was due to the fact that the three-ply used was in most cases not much more than $\frac{1}{16}$ in. thick, and that, consequently, it was well-nigh impossible to paint, dope or otherwise treat it against moisture absorption. Capt. de Havilland has long been an advocate of three-ply covering for fuselages, and it must be admitted that the two de Havilland fuselages seemed to have suffered less than the majority of machines. We do not know what the secret is, but evidently it *is* possible to reduce to a minimum the buckling of very thin three-ply due to the action of moisture.

INTERESTED SPECTATORS AT LYMPNE: Mr. and Mrs. Hubert Scott-Paine, with the Duke of Sutherland, watching the flying.

Many visitors to the sheds were puzzled by the Parnall "Pixie." Where before there was a monoplane with fairly large wings, a 500 c.c. Douglas, and the number 9 painted on the rudder, one now found another monoplane with very tiny wings, a 750 c.c. Douglas, and the figure 24 on the rudder. This was the machine which on Thursday, October 11, had established the speed "record" of the meeting by covering



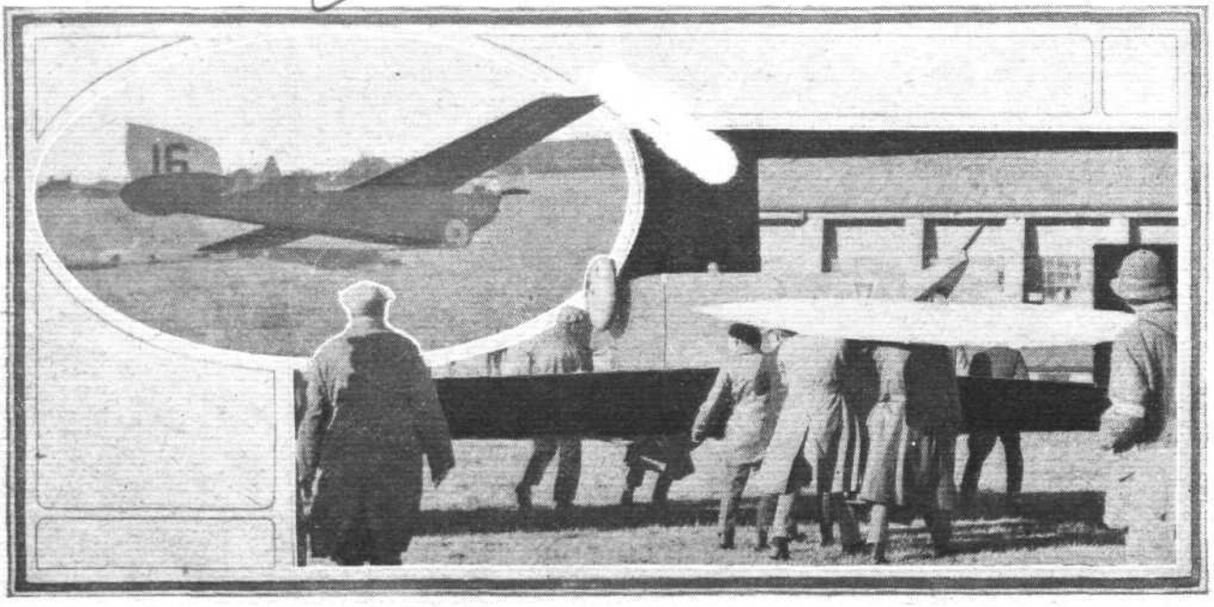
AFTER A FLIGHT: Bringing in the "Hurricane" monoplane. The lower picture gives a good idea of the lines of this machine, the general arrangement drawings of which were published last week. Inset, the machine in flight.

two laps of the course at an average speed of 76·1 m.p.h. In vain did one look for the larger machine. Then the mystery was solved by Mr. Bolas, who explained that two machines had been entered, one for the economy and altitude flying, and the other for the speed competition. Instead of building two complete machines he had made the one fuselage, undercarriage and tail do for both, merely changing the engine, wings and rudder (the latter only because of the different numbers). A considerable saving had thus been effected.

The Avro firm, to whom the idea of entering "two" machines had not occurred, had a pair of smaller wings for the Avro monoplane ready to be put on, but the officials of the meeting refused to let the machine enter, as by substituting the smaller wings, they considered, the machine would have been so much changed as to constitute in effect a different type. Thus we had no opportunity of discovering what the Avro monoplane would have done in the matter of speed when the wing area was reduced. Judging from the performance of No. 6 with the large wings, her speed should have been quite good with the smaller ones.

Everyone sympathised with the Gloucestershire Aircraft Company, whose very pretty little biplane, the "Gannet" (described and illustrated in FLIGHT on October 4, 1923), was prevented by a refractory engine from taking part in the competitions. This machine is fitted with a Carden two-cylinder, two-stroke engine of 750 c.c. capacity. This engine is an experimental one, designed and built for the competitions, and the time available was too short to enable it to get through its teething troubles in time. We have no doubt that had the Carden firm had another month or two in which to discover the various little "snags" that must be expected to crop up in the evolution of a new type of engine, the "Gannet" would have performed very well indeed. We rather incline to think that Mr. Folland, the designer of the "Gannet," is probably on the right track in having decided in favour of the two-cylinder vertical two-stroke type of engine. The balance and torque of this type should be very good, while the simplicity of the two-stroke should appeal to the private owner-pilot who does not care to have to do more tinkering than absolutely necessary. The fact that the two-stroke is not very economical in petrol need not cause any misgivings, as even a two-stroke should give a mileage of at

The "Poncelet" at Lympne: Lieut. Simonet in the cockpit of his machine "Castar." Inset, the machine in flight.



THE "VIVETTE" TURNS TURTLE: In starting for a flight at Lympne the Poncelet light 'plane "Vivette" was caught by a gust under one wing, with the result that she was blown on to one wing tip, buckled the port wheel, and turned over on her back. The pilot was unhurt. The larger photograph shows willing helpers carrying the machine back with her wheels uppermost, in the good old 1910-11 style. In the inset the machine is seen at the moment of striking.

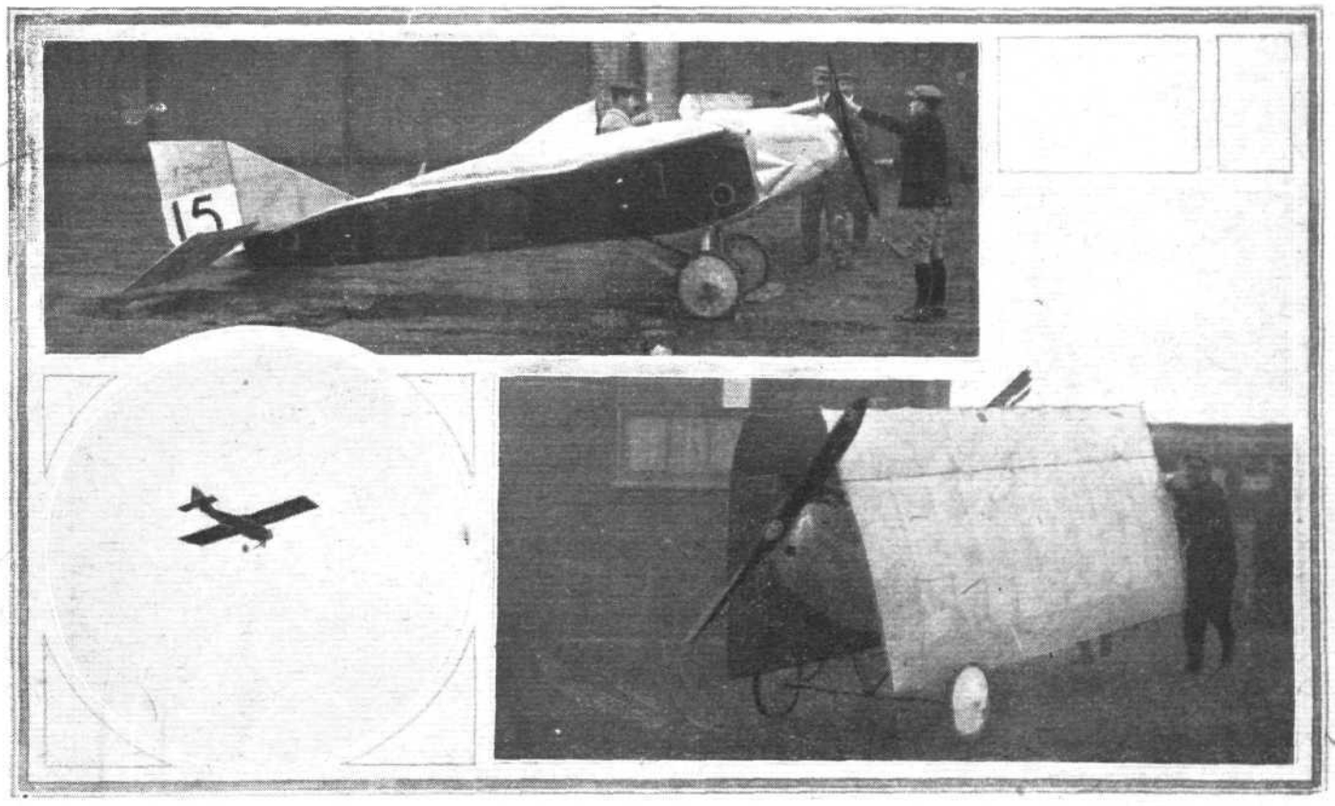
least 50 miles per gallon, which is low enough to make flying economical. The "Gannet" itself came in for very favourable comment on account of its pleasing lines, good workmanship, and excellent finish. Its very diminutive size makes an irresistible appeal (the span with wings spread is but 18 ft., and with wings folded less than 7 ft., while the height is only 6 ft.), and a machine of these reduced dimensions could be comfortably housed in any ordinary garage. The machine was painted in the Gloucestershire Aircraft Company's racing colours, *i.e.*, blue fuselage and white wings, and was extremely well finished.

The Last Day of the Meeting

After a day of gales and rain the weather suddenly took a turn for the better on Friday evening. Shortly before sunset a faint streak of light was seen in the west. The clouds gradually cleared, and the setting sun was seen for a few minutes. As if by magic the dark rain clouds disappeared, the rain ceased, and the wind dropped to almost nothing, at any rate at ground level. On the aerodrome, although it was long after official "closing time," there was feverish activity, engines being overhauled and run up, just in case the meteorological experts should prove wrong. According to them, it seemed to be a case of "depressions to the right of them, depressions to the left of them," etc. Nevertheless, the unexpected had been known to happen before, and nobody was taking any chances. Quite late in the evening passers-by along the country roads around the aerodrome could hear engines running, and the lights were burning long after the countryside had gone to its rest. Saturday morning brought a clear sky, wonderful visibility, and, unfortunately, a fairly strong ground wind, which was suspected of being a young gale at a few thousand feet altitude.

Shortly after 7 a.m., the first machine took the air. This was No. 10, the Vickers "Viget," piloted by Capt. Cockerell. Steering out over the south side of the aerodrome Cockerell got the up-draught from the range of hills and shot up like a lift, climbing remarkably strongly. Major Hemming on the de Havilland was the next to follow, also getting away well. Then followed in quick succession Major Wright on No. 3 "Wren," Capt. Hamersley on the Avro biplane (No. 11), Capt. Broad on No. 8 (D.H. monoplane), Piercey on the A.N.E.C., and Longton on the No. 4 "Wren." Some of these machines were going for altitude tests for the prize presented by Sir Charles Wakefield. Others were hoping to improve upon their previous consumption figures, while a few were intending to have a try at the speed "record." Soon there were so many machines in the air that it became a matter of some difficulty to follow their progress. Cockerell was seen to be coming back, apparently having decided that the wind was a bit too strong at an altitude of some 5,000 ft., as his machine was being blown backwards while he was climbing. When he landed he reported that the wind was very strong, but that

PERSONALITIES AT LYMPNE : Sir Charles Wakefield (left) with Mr. Stanhope Spencer, London representative of Wakefield's. Sir Charles presented a prize of £200 for the greatest altitude attained. This prize was won by Mr. Piercey on an A.N.E.C. monoplane.



THE PEYRET MONOPLANE AT LYMPNE : The upper photograph shows the machine in side view, with M. Louis Peyret, the constructor, in the cockpit preparing to give the Sergant engine a test. Below the machine is seen during the transport test, while the inset shows it in flight.

the reason why he had abandoned the altitude attempt was that his engine refused to keep up its "revs."

Raynham went off for an altitude flight, but returned without having attained any very great height. Piercey on No. 18 (A.N.E.C. monoplane) made a start, but his engine petered out just as he was crossing the starting line, and he landed again. James on the other A.N.E.C. monoplane made a flight in the speed competition, disappearing in the direction of the first turning point at a terrific rate. The Gnosspelius "Gull," piloted by Stocken, also made a start in this competition, but later had to make a forced landing somewhere out along the course.

M. Maneyrol brought out the Peyret monoplane (No. 15), and when he swung out over the marshes to the south of the aerodrome it was realised that he was going for altitude, making use of the up-currents as several other competitors had done. At first he seemed to go rather far out towards, or beyond, the coast, but later he veered more inland again, and soon he was lost among the patches of white clouds that dotted the deep blue sky.

Bert Hinkler had the Avro monoplane brought out, evidently intending to complete his remaining laps, which should total 1,000 miles covered during the week. The wind had by now increased in force, and, to make matters worse, it was very gusty. As Hinkler began to turn to the left to round the aerodrome turning point, he got into the down currents and swirls that seem always present over this side of the aerodrome in strong south-westerly winds, and for a few moments he looked none too comfortable. Instead of completing his turn he kept on out over the trees bordering the south side of the aerodrome, scraping along the tops of them in rather alarming style. However, he ultimately got into the up-currents from the cliffs, and then rose strongly, getting on to his course. As he was out for laps and not for speed or economy the slight loss of time mattered little.

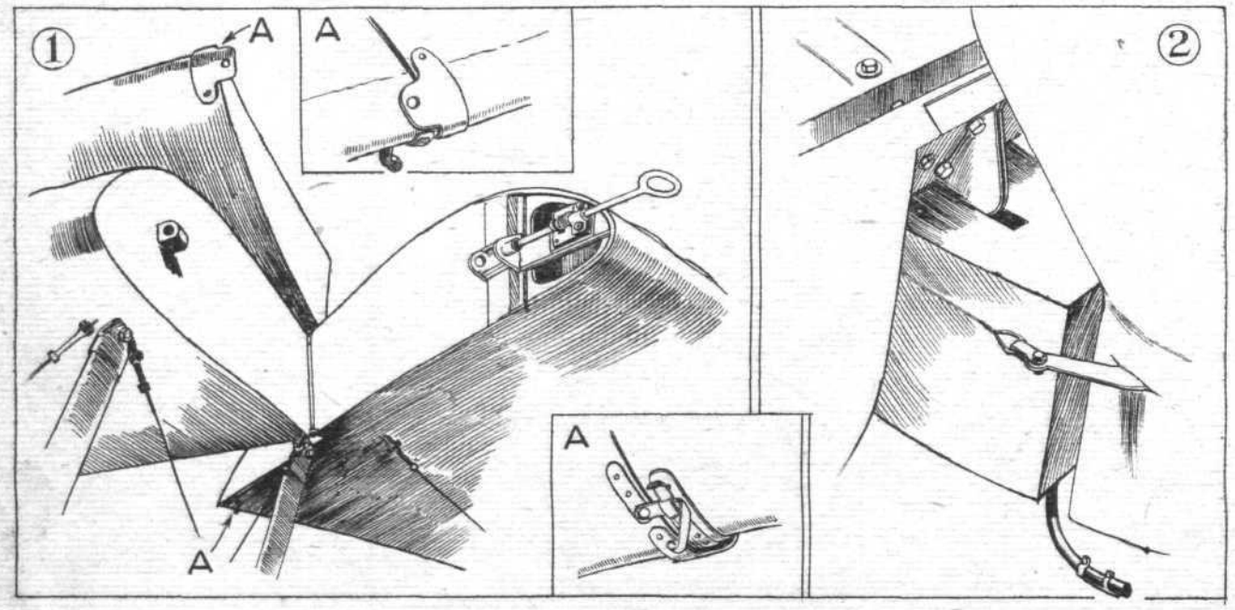
When James brought out the A.N.E.C. monoplane (No. 17) to go for speed tests, the Parnall "Pixie II" (No. 24) and the "Hurricane" (No. 14) were brought on to the aerodrome. Macmillan actually started, climbing extraordinarily well in spite of the small wings, but after a short circuit he landed again. In the meantime James did not have any too comfortable a time of it, the machine "hunting" rather alarmingly once when he was approaching the aerodrome turning point. It seems that when flying at high speed with this fairly light loading the A.N.E.C. is approaching the lower critical angle. However, James stuck to his job and completed his second circuit.

M. V. Simonet brought out the Poncelet monoplane (No. 21), and made a start in the altitude competition. After having got a "lift" from the up-currents over the cliffs, he veered inland, so that if he got drifted backwards, as several of the other competitors had done, he would not be blown out to sea.

Capt. Broad on the de Havilland monoplane, the "Humming-Bird" (No. 8), was seen to be approaching the aerodrome at a good height, having apparently abandoned his altitude attempt. When some 300-400 ft. up he commenced to do a series of Immelmann turns, and later two loops. This was the first time on record that a light 'plane had looped, and the performance was therefore naturally watched with great interest. The machine appeared to hesitate for just a fraction of a second near the top of the loop, but then carried on and completed the loop in good style, showing no tendency to fall out of the top of the loop, as might have been expected. On landing Capt. Broad was loudly applauded by the spectators.

Mr. Olley then had the Sayers-Handley Page monoplane (No. 25) brought out on the aerodrome, and a party of helpers got ready to start him with the "bunjy" ropes. The machine appeared to take off in a cross wind, and as it neared the starting line at a low altitude it caught the down-gusts from over the sheds, wobbling and flicking as it went along. Actually it just managed to cross the starting line in flight, but was then blown down none too gently. It leaned over on to a wing tip, but as it is very low on the ground it did not show any tendency to turn over, as might have a higher machine with projecting undercarriage. The performance was what the French call "emotioning," and many felt relieved when Olley opened the "lid" and stepped out smiling.

Further excitement was in store for the spectators. Baron de Lettenhove brought out the Poncelet monoplane No. 16, intending to make an altitude flight. Having had the machine taken to the middle of the aerodrome he commenced to taxy towards the enclosures. The machine did not seem to gather speed very rapidly, and when some 30 or 40 yards from the railings it was still on the ground. Just as it began to lift the pilot turned slightly to the left. At the same instant a gust struck the machine, lifting the right wing into the air, and with a considerable amount of side-drift on the machine sank to the ground. The left wheel buckled up and the left wing tip touched, swinging the machine around farther to the left. Then followed the usual "cartwheel," and the tail rose into the air. The pilot had switched off his engine, but the wind, getting under the tail, threw the machine over on its back, and it landed with a thud. For a few seconds there was some fear regarding the safety of the pilot, but when the machine was lifted he was found to be uninjured, the petrol tank mounted as a fairing behind his head, on the top of the fuselage, having apparently saved him. At the same time, should the petrol in the tank have become ignited the situation would have been a serious one, as the pilot would in that case have been hanging with his head in a pool of petrol. As it was, no great damage was done beyond a buckled wheel and a broken rudder. The propeller even did not



LIGHT 'PLANES AT LYMPNE: A few constructional details. 1. The wing locking device on the Gloucestershire "Gannet"; the locking pin has a cam on it which engages with the slot in the steel plate; the trailing edge of the top centre-section folds up for folding the wings, and is held in position, when the wings are spread, by the fitting shown at A. 2. The elevator crank lever, rudder crank, and tail skid of the Avro biplane.

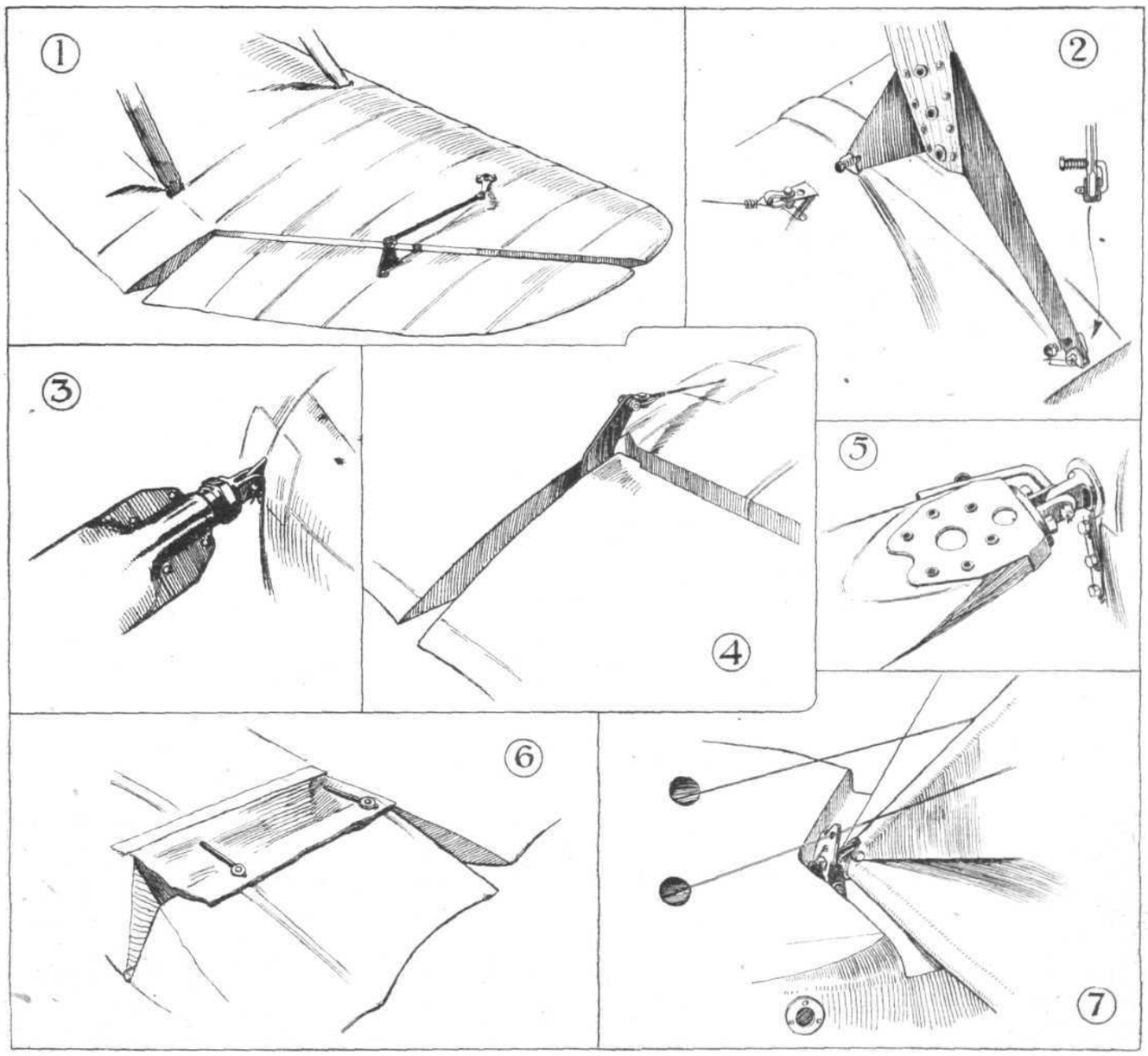
appear to have suffered, having stopped, as luck would have it, in a horizontal position.

James landed after having completed his two speed laps, and as soon as the tanks could be re-filled Piercey climbed on board and commenced to gain altitude. He was not away long, however, before No. 17 was seen to be returning, and when he had alighted it was found that both the official barographs that had been handed to him had stuck at 5,000 ft., which height he had reached in the astonishingly short time of 11 minutes. After obtaining fresh instruments Piercey ascended again, and was soon lost among the clouds.

In the meantime Capt. Hamersley had started out on the Avro biplane (No. 11), also on altitude bent, but the small biplane, finished in aluminium dope, could not easily be followed among the clouds, and although he was seen occasionally until a mere speck, he was ultimately lost to sight. No. 15, the Peyret monoplane piloted by Maneyrol, was picked up by people with good eyesight, and speculation was rife concerning the altitude he had reached. It was a considerable time before he landed, as these machines with a very fine gliding angle take very nearly as long coming down as they do to go up, but when ultimately he alighted it was found that his barograph was showing approximately 10,000 ft. Although this figure had to be corrected, it was evident that Maneyrol had beaten Capt. Hamersley's figure of 6,750 ft., established on Monday, October 8. Maneyrol's landing was spectacular. Coming very close to the railing around the enclosures while still about 20 ft. above the ground, he glided towards the sheds, and just as everyone thought he was going to crash into the people he "planted" the machine on the ground and stopped. It looked as if the air had suddenly been "cut from under him," as someone put it. The landing was abrupt, but certainly not harsh.

By this time a very large crowd had gathered, and among those present were some very distinguished visitors, of whom we mention but a few. The Air Minister, Sir Samuel Hoare, arrived, accompanied by Lady Maud Hoare, and made a tour of inspection, accompanied by the Duke and Duchess of Sutherland and Lord Hugh Cecil. About noon His Royal Highness the Duke of York arrived, and was conducted around the line of machines by General Festing. Air Vice-Marshal Sir Geoffrey Salmond, Sir Wm. Sefton Brancker, and General Bagnall-Wild were also of the party. The distinguished visitors showed great interest in the machines, and were introduced to most of the pilots and constructors of the competing machines.

Maneyrol's altitude was corrected to 9,400 ft., and it now remained to be seen whether Capt. Hamersley and Mr. Piercey had beaten this performance. When Hamersley landed his

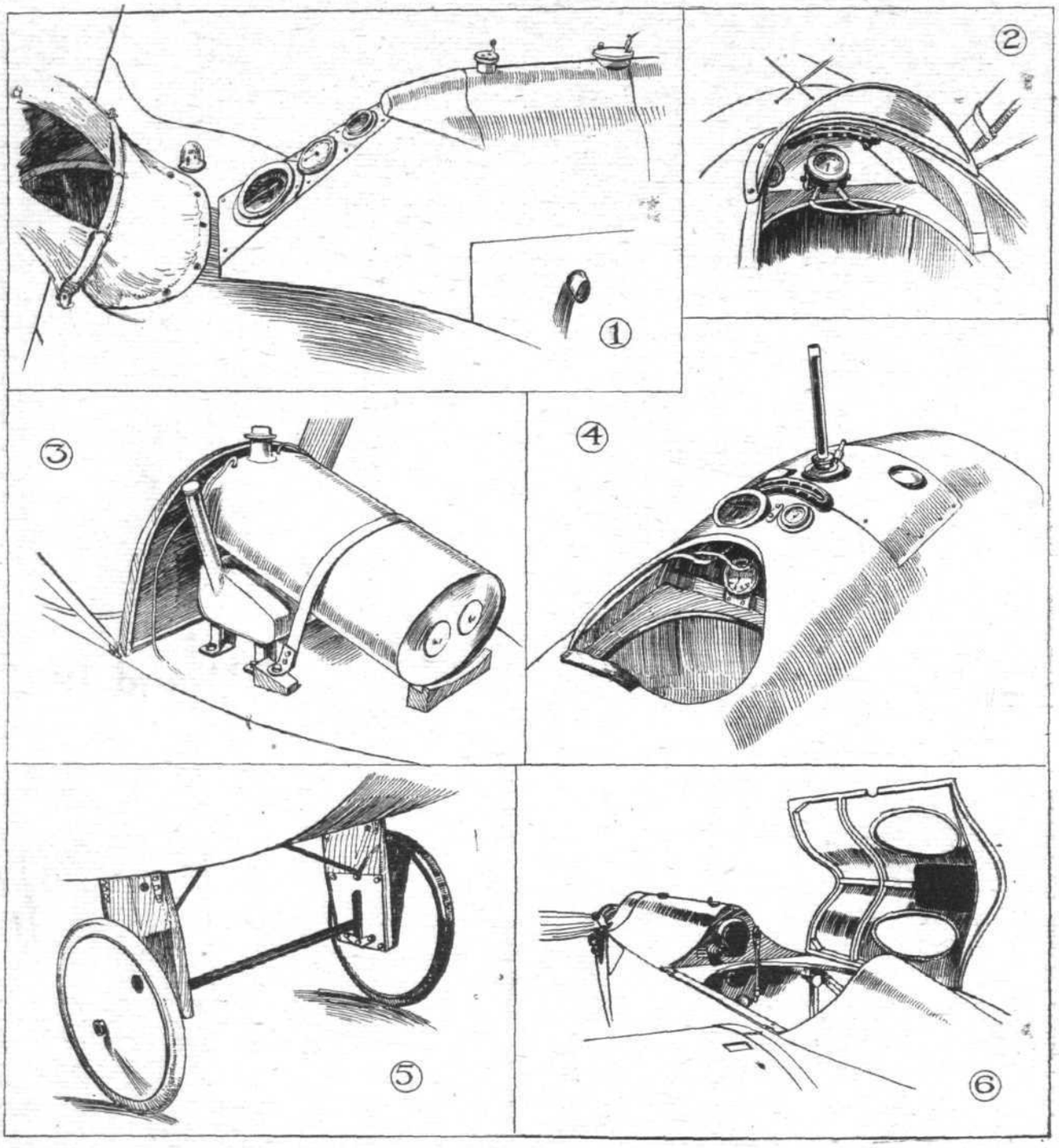


LIGHT 'PLANES AT LYMPNE: Some constructional details. 1. Aileron on the Parnall "Pixie"; the rear spar is swept forward to meet the front spar at the wing tip; the ailerons have a differential action. 2. Attachment of interplane strut on Avro biplane; note quick-release fittings. 3. The neat strut-end with adjustment on the Parnall "Pixie." 4. Aileron crank lever on Avro monoplane. 5. Wing strut attachment to fuselage on de Havilland monoplane. 6. In the Poncelet monoplanes the gap between aileron and rear wing spar is covered with a strip of celluloid. 7. Adjustable tail fitting on Parnall "Pixie."

height was found to have been 13,000 ft., but Piercey, who landed shortly afterwards, had reached 13,600 ft.

Bert Hinkler, during the day, successfully completed the six laps necessary to bring his total up to 80 laps, or a distance of 1,000 miles. During the afternoon Capt. Broad again took

When Maneyrol heard that his altitude had been beaten he made ready to go up again, and soon was away on his second attempt, at the termination of which he was, unfortunately, to meet with a fatal accident. A little later both Hamersley and Piercey went up again to try if possible to improve upon



LIGHT 'PLANES AT LYMPNE: Some interesting constructional features: 1, the rear sloping edge of the engine mounting fairing on the "Wrens" is very ingeniously utilised as an instrument-board. The various dials are immediately in front of the pilot, and as they are out in the open they are well illuminated and consequently easily read. 2, The cockpit of the Gloucestershire "Gannet." 3, Petrol and oil tanks of the Avro biplane (No. 5). 4, View into the cockpit of the Parnall "Pixie." Note the petrol level indicator. 5, The undercarriage of the Avro monoplane is of very clean design, the rubber shock absorbers being enclosed in the strut fairings. 6, The pilot's cockpit in the Sayers-Handley Page monoplane (No. 25) is totally enclosed, the pilot looking through two small openings in the roof. Late arrival at Lympne and a refractory engine prevented this machine from being thoroughly tested.

the D.H.53 (No. 8) up and did a series of loops and two rolls. When he had alighted the machine was taken up for a flight by Air-Commodore Longcroft, who made a very pretty flight around the aerodrome and finished with a perfect landing.

Later the same machine was taken up by Wing-Commander Pretyman, who also made a fine flight and landed without difficulty. Both were greatly impressed by the general handiness of the de Havilland machine.

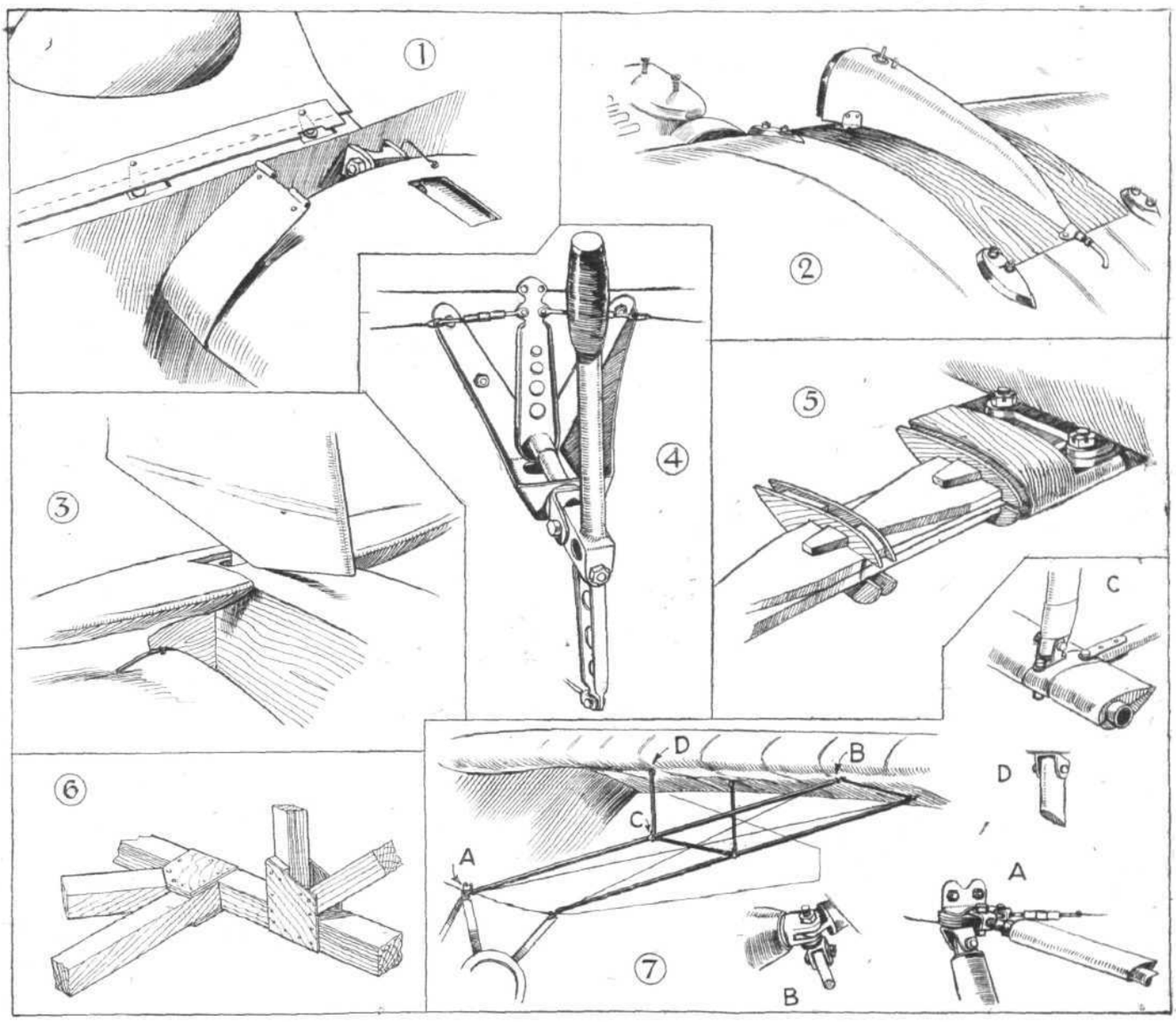
their previous height. Both had been stopped by frozen carburettors, but a different mixture of fuel was hoped to have overcome this difficulty.

Maneyrol was then seen flying at a great height, but evidently coming down slowly. After a time he crossed the aerodrome at a few hundred feet, and, circling to come in to land, began to lose height, but certainly not diving at all steeply. Then suddenly the wings were seen to collapse when at a height of about 100 ft., and the machine dived to

the ground, the unfortunate pilot being killed instantly. It is difficult to say definitely what was the cause of the accident, but designers who saw it inclined to the belief that it was a download on the front spar that caused the wing bracing struts to fail and with them the whole wing. The accident was witnessed by thousands of spectators, and cast gloom over the rest of the day's proceedings. H.R.H. the Duke of York sent his equerry to convey his deepest sympathy to M. Peyret and the other representatives of the French entrants. Sir Samuel Hoare, the Duke of Sutherland, and other officials of the Air Ministry also sent messages of sympathy. As a result of the sad and very regrettable accident the banquet that it had been intended to hold in Hythe on Saturday evening was cancelled.

During the latter part of Saturday afternoon several fine flights were made. Capt. Macmillan set out on the Parnall "Pixie" to attempt to improve his previous speed figure of 76·1 m.p.h. He covered one lap at a speed of about 80 m.p.h., but had to make a forced landing during the second lap. Thus the flight did not count in the competition. Hinkler, on the Avro monoplane, who had received a great ovation on completing his 1,000 miles total, went up and made several evolutions over the aerodrome. Capt. Hamersley, on the Avro biplane No. 11, ascended for another attempt on the height record, as did also Mr. Piercey on the A.N.E.C. No. 17. While they were away Capt. Broad "evoluted" on the "Humming-Bird," Major Hemming made a flight or two on the "Hemming-Bird," and towards evening Lieut. Barrett took up the Avro biplane No. 5. He had to make a forced landing, however, and the machine, which kept "kiting" in the high wind, was somewhat damaged, although the pilot was unhurt. Both the Gnosspelius "Gulls" also came down with engine trouble, but were not damaged, while Macmillan, as already stated, forced-landed the "Pixie," also without damage.

Towards evening Flight-Lieut. Longton brought out the "Wren" (No. 4), and, to the amazement of everyone, put up a splendid performance of "crazy flying." Those who have seen Lieut. Longton performing this particular stunt at the Aerial Pageants will realise what the same evolutions looked like when carried out on a "Wren." This astounding machine, in spite of its diminutive engine, flies very strongly, and the controllability is all that could be asked, the machine being under perfect control even at speeds well below 30 m.p.h., and probably nearer 20 m.p.h. Longton, in addition to "crazy flying," performed such evolutions as stalling and side-slipping, and throughout it all one never had the slightest impression of the "Wren" being under-powered. In point of fact, we believe that the machine has probably a greater *percentage* of reserve power than the majority of the light 'planes that took part in the competition. The high speed seemed very good, probably about 50 m.p.h., and when slow-



LIGHT 'PLANES AT LYMPNE: A few interesting constructional features. 1, The wing attachment on the Sayers-Handley Page monoplane. The trap door is locked by the ingenious arrangement shown. 2, The petrol tank on the Poncelet monoplanes forms a fairing behind the pilot's head. 3 shows the curious spur tail skid on the Poncelet; 4, the unusual control stick arrangement on the "Hurricane," and 5, the laminated steel spring axle of the undercarriage. In 6 is shown the joint of struts to longerons on the Parnall "Pixie." The larger sketch in 7 shows the wing bracing of the Peyret monoplane with details. It seems probable that it was this bracing which failed and thus caused the wings to collapse.

flying against a light wind the machine simply descended like a lift. In the stalls there was no violent movement, and the machine dived and regained flying speed with a surprisingly small drop. Thus, should a pilot accidentally stall the machine at about 50 ft., there seems to be every probability that she would still have plenty of room to regain her normal attitude before touching the ground. The stability seems to be extraordinarily good, so much so, in fact, that Squadron-Leader Maurice Wright had removed the cross-level from his machine, as it was not required. He never bothered about lateral control in normal flying, as the machine, if tilted by a gust, righted itself without any assistance from the pilot. Another point in favour of the "Wren" is that, with the fuselage projecting forward as it does under the propeller, it is impossible to smash the latter, while for all practical purposes it should be equally impossible to turn the machine over on landing. Altogether the "Wren" is one of the most amazing aeroplanes ever constructed, and absolutely the only criticism that anyone could possibly level against it is that for cross-country flying it might be found a little slow. As against that must be set the fact that the machine is as near "fool-proof" as any aeroplane we have ever seen. The proportioning of fin surfaces, dihedral, control surfaces, etc., seem to be as near perfection as one is ever likely to attain. The aerodynamic efficiency is extraordinarily good—must be so in view of the performance attained with an engine of but 398 c.c. capacity. The "Wren" is not a racer, but when that has been said all has been said that could be brought up against it.

About one hour before the official closing time Mr. Piercey returned from his altitude flight on the A.N.E.C. (No. 17), and his barograph, when corrected for temperature, showed that he had reached a height of 14,400 ft. On landing Mr. Piercey, who may be assumed to have been numbed with the intense cold at the great height at which he had been flying, overshot the mark somewhat, and was still going at fairly high speed on the ground when approaching the enclosures. Capt. Rogers, a representative of the British Petroleum Company, flung himself against one of the wings of the machine, thus causing it to swerve. In so doing he was winded and bruised, but he prevented the machine from running into the railings. Instead it collided with the tail plane of the de Havilland No. 8, which was damaged. The wing tip of the A.N.E.C. also suffered somewhat, and a final attempt by James to beat Macmillan's speed figure had to be abandoned. Some time later Capt. Hamersley landed on the Avro biplane, and the corrected reading of his altimeter was recorded at 13,850 ft.

The Prize Winners

Thus ended the first British light 'plane meeting, and the final figures attained gave the following results and prize-winners :—

The Duke of Sutherland's prize of £500 and the *Daily Mail* prize of £1,000, offered for the greatest distance flown on one gallon of petrol, are divided evenly between Flight-Lieut. Longton, who flew the English Electric Company's "Wren" (No. 4), 398 c.c. A.B.C. engine, and Mr. "Jimmy" James, who piloted the A.N.E.C. monoplane (No. 17), 700 c.c. Blackburne engine. The mileage attained by both was 87·5 m.p.g.

The Abdulla prize of £500, offered for the greatest speed attained, was won by Capt. Macmillan, who was flying a Parnall "Pixie," with 750 c.c. Douglas engine. Macmillan's speed was 76·1 m.p.h.

The prize of £200 offered by Sir Charles Wakefield for the greatest height attained was won by Mr. Maurice Piercey, flying the same machine used by James in winning the economy competition (A.N.E.C. monoplane, No. 17). Piercey's best height was 14,400 ft.

The two prizes of £150 each, offered by the Society of Motor Manufacturers and Traders and by the British Cycle and Motor-Cycle Manufacturers' and Traders' Union, for the greatest total mileage covered during the meeting, was won by Mr. Bert Hinkler on the Avro monoplane, with 700 c.c. Blackburne engine, who covered 80 laps of the course, of a total distance of 1,000 miles.

A prize of £100, offered by the Duke of Sutherland and members of the Royal Aero Club for a landing competition, was awarded to Capt. Hamersley as an appreciation of his fine performance in taking the little Avro biplane, 500 c.c. Douglas, up to a height of 13,850 ft., the gusty wind having prevented the landing and getting-off competition from being held.

The Duke of Sutherland has already intimated his willingness to offer another prize next year. This will probably be for two-seater light 'planes, His Grace being of the opinion that a machine that will carry a passenger in addition to the pilot should have a wider appeal than the single-seater. In that case the limit on engine capacity will probably be increased to about 1,200 or 1,500 c.c.

It is also understood that Sir Samuel Hoare has intimated the probability of the Air Ministry offering a prize next year, so that the holding of light 'plane competitions seems to be in a fair way to become an annual event of considerable importance.

The Supermarine "Sea Eagle" Weathers a Gale

DURING the fierce northerly gale which swept over the southern half of the British Isles during October 3 and 4, the Supermarine "Sea Eagle" flying boat, employed on the British Marine Air Navigation Company's service between Southampton and Guernsey, had an excellent opportunity of demonstrating its seaworthy, and airworthy, qualities.

The "Sea Eagle" left the air-port at Woolston on its usual voyage to Guernsey on October 2. On the return journey in the evening, when about half the distance had been accomplished, the machine ran into an exceptionally heavy storm, and the pilot, Capt. F. J. Bailey, thought it advisable to return to Guernsey, which was safely reached. The machine was moored out for the night in the harbour.

Instead of moderating, during Wednesday the gale increased in force, and both sea and air traffic was held up. During the period that the "Sea Eagle" was lying at her moorings on Wednesday the air-speed indicator in the pilot's cockpit gave a reading of 45 m.p.h., yet the "Sea Eagle" rode safely at its moorings and braved the storm undamaged.

On Thursday afternoon the weather moderated somewhat, and the opportunity was taken to commence the return trip to Southampton, which was safely accomplished, against a strong head wind, in 2 hrs. 15 mins.—the normal time taken for the journey being 1 hr. 30 mins.

Referring to the "accident" to one of the Supermarine flying boats on the Channel Island service last Saturday, as some rather misleading statements appeared in the Press we give herewith the actual facts of the incident. On Saturday afternoon Capt. F. J. Bailey, accompanied by a mechanic named Linsdale, left St. Peter Port, Guernsey, on the return trip to Southampton. Capt. H. C. Biard, with five passengers and a mechanic, followed on a second machine two minutes later. When about five miles off Alderney, Bailey's machine (G-EBGR) was compelled to descend owing to engine trouble. Seeing his colleague's plight, Biard also descended, with the object of rendering assistance. Being unable to give any help, however, and observing that the other machine was riding the water well in spite of a very choppy sea, Biard decided to put back to Guernsey, which he accomplished safely. Shortly after, a motor boat was sent off to assist the other machine, which in the meanwhile had cast out its sea-anchor and was patiently awaiting help. Bailey fired S.O.S. signals at intervals, and after about five hours, during which time the machine rode the rough sea in fine style, the motor boat *Lita* rescued the captain and "crew" and towed the machine, safely and undamaged, into Alderney Harbour.

Gordon-Bennett Balloon Race

THE official result of the balloon race for the Gordon-Bennett Cup is declared as follows :—

		Distance covered. Kms.
1.	Belgica (Belgium)	1,155
2.	Prince Leopold (Belgium)	1,005
3.	Helvetia (Switzerland)	546
4.	Hesperic (Spain)	328
5.	Picardie (France)	282
6.	U.S. Navy 6,699 (America)	175
7.	Banshee III (Great Britain)	139
8.	Douro (Spain)	134
9.	U.S. Army S.6 (America)*	130
10.	Zurich (Switzerland)	85
11.	Geneva (Switzerland)*	67
12.	Savoie (France)	64
13.	Fernande (France)	57
14.	Polar (Spain)*	34

* Disasters overtook the balloons occupying the ninth, eleventh, and fourteenth places. Margaret (Great Britain), which covered 875 kms., was unplaced owing to having descended in the sea.

FLIGHT

THE ROYAL AIR FORCE

London Gazette, October 9, 1923

General Duties Branch

Sqdn.-Ldr. S. M. Cleverly is granted a perm. commn.; Oct. 10. The follg. Pilot Offrs. are promoted to the rank of Flying Offr :—R. C. Harrison; May 28. R. L. Palmer, W. A. C. A. Yearsley, C. F. H. Grace, E. Marler; June 29. H. V. Alder; July 1. L. A. L. Firmin; July 2. The follg. Pilot Offrs. on probation are confirmed in rank (Sept. 15) :—R. E. Bath, W. D. Baxter, R. A. A. Cole, C. J. A. Delany, H. V. Kerckhove, M.C., J. E. Tomes, J. K. Trimmer, E. G. Whinney, B. L. Young, S. A. Young.

The follg. are placed on half pay :—*Scale A.*—Air Commodore C. A. H. Longcroft, C.B., C.M.G., D.S.O., A.F.C.; Oct. 9. *Scale B.*—Flight-Lieut. W. W. Wakefield; Aug. 27.

The follg. resign their permanent commns. :—Flight-Lieut. W. W. Wakefield; Oct. 3. Flying Offr. A. G. B. Ellis; Sept. 26.

Pilot Offr. A. W. B. Walker resigns his short service commn.; Oct. 3. Pilot Offr. G. G. Hopkins is removed from the R.A.F., His Majesty having no further use for his services; Oct. 2.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified :—

General Duties Branch

Air Commodores : C. A. H. Longcroft, C.B., C.M.G., D.S.O., A.F.C., to Half-Pay List. 9.10.23. E. R. Ludlow-Hewitt, C.M.G., D.S.O., M.C., to Air Ministry. 1.10.23, for duty as President of Aerodrome Board.

Squadron Leader N. M. Martin, C.B.E., to R.A.F. Depot. 19.9.23, pending disposal.

Flight Lieutenants : C. E. H. Medhurst, O.B.E., M.C., to Air Ministry. 15.10.23. C. B. Dick-Cleland, to Inland Area Aircraft Depot, Henlow. 12.10.23. C. Boumphrey, D.F.C., to R.A.F. Base, Leuchars. 15.9.23, pending allocation to a Flight. K. C. Tilman, to R.A.F. Base, Leuchars. 23.10.23, pending allocation to a Reconnaissance Flight. F. W. Trott, O.B.E., M.C., and O. R. Gayford, D.F.C., both to R.A.F. Depot. 22.9.23, on transfer to Home Estab. R. L. Sweeny, to Air Ministry. 22.9.23.

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LONDON TERMINAL AERODROME

Monday evening, October 1, 1923

A New Fokker "Air Express"

I HEAR that the first Fokker F.7 will be in commission on the London-Amsterdam route at the beginning of next year. This machine, which has an exceptionally deep cantilever wing, has accommodation for a pilot and mechanic and eight passengers, and is fitted with a single Rolls-Royce "Eagle 9." There is a communicating door between the pilot's cockpit and the cabin, which is large and roomy. At present the F.7 wing has only been tested on an F.5 fuselage, but the Dutch pilots who saw this test say that the performance is remarkable, the machine taking off with full load, and having a landing speed in the neighbourhood of 35 miles an hour.

There are rumours that the night service between London and Paris will be commenced by the Handley Page Transport, Ltd., early this month. Negotiations have for some time past been going on between this company and the Air Ministry, and an agreement has been reached regarding an experimental night service to Paris. The Handley Page 0400, which is at present operating the Paris-Zurich route of the London-Zurich service, is to be used for these night flights, the Zurich service having closed on Saturday. It is proposed to do the outward journey one night and the inward journey the following night, thus giving an alternate night service in either direction.

Mr. Chattaway, who, after leaving the Instone Air Line, has been one of the Assistant C.A.T.O.'s at Croydon, has been appointed C.A.T.O. at Manchester. Although the Daimler service to Manchester is for the time being suspended, there is a considerable amount of air traffic through the Manchester aerodrome. Now that the experimental service between Plymouth and Belfast is running, De Havilland machines are landing there several times a day, while in the ordinary course of events there are two or three taxiplanes a day which put in to Manchester to refuel. Mr. Chattaway takes the good wishes of everybody at Croydon with him to his new station.

The first match, the other evening, of a billiard tournament, between the aerodrome and the sergeants' mess of the Croydon police, was won by the latter, who entertained the aerodrome players with great hospitality. Other matches, in due course, will be played between the aerodrome and certain R.A.F. stations.

Monday evening, October 8

DESPITE all efforts to enable the London-Berlin service to be continued, no satisfactory arrangement can be made whereby the regular London–Berlin-in-a-day flight can be made with any hope of regularity during the winter, and the Daimler Airway have decided to terminate this service during the winter months at Hamburg.

This winter time-table comes into force today, and the machine will leave Croydon at 8 a.m., arriving at Hamburg at 3.25 p.m., while the return flight will commence at Hamburg at 9 a.m., Croydon being reached at 1.55 p.m.

The gales and rain during the week have interfered considerably with the regular running of the services, but, in spite of this, on the day of the great gale last week—when the Channel shipping was entirely suspended—three machines made successful journeys across the Channel and reached their destinations. One of these was the Daimler piloted by Mr. H. S. Robertson from Amsterdam. Another was a Fokker from London to Amsterdam; and the third was a D.H.34 of the Instone Air Line, piloted by Mr. Hinchcliffe, from London to Cologne. These three machines completed their flights nowithstanding the fact that at a height of 2,000 ft. the official air records at Lympne showed a gale of 70 miles on hour!

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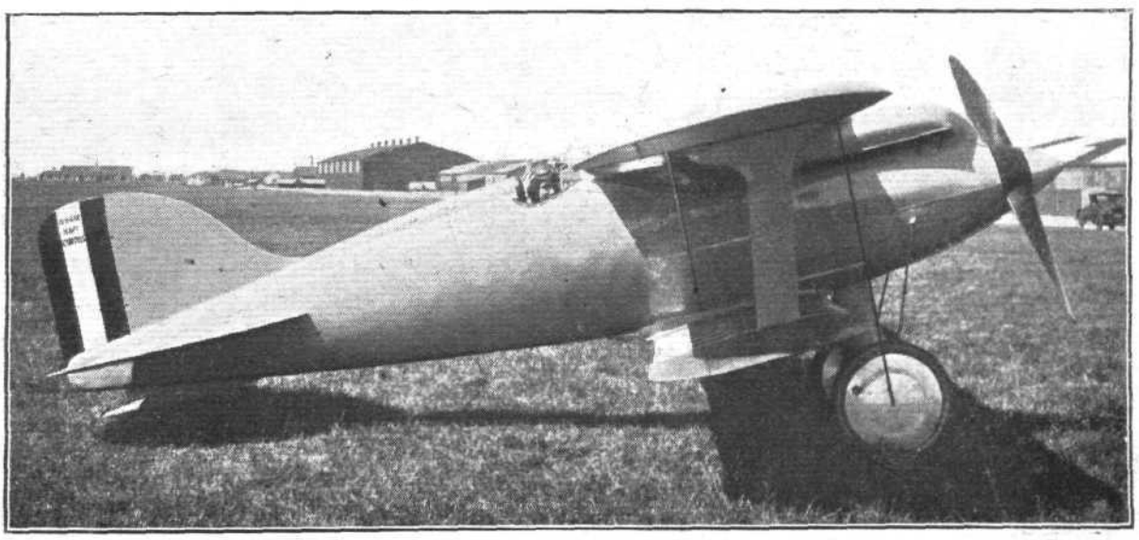

The U.S. Navy-Curtiss R.2-C racer, winner of the 1923 Pulitzer Trophy Race, with a speed of 243·67 m.p.h. It is fitted with a 460 (500) h.p. Curtiss C.D.12 engine and wing radiators. Other characteristics are : Span, 22 ft. (top), 19 ft. 3 ins. (bottom); chord, 4 ft. 8 ins. (top), 3 ft. 4 ins. (bottom); gap, 3 ft. 2 ins.; stagger, 11¼ ins.; o.a. length, 19 ft. 8½ ins.; height, 8 ft. 1 in.; wing area, 148·25 sq. ft.; weight empty, 1,690 lbs.; weight loaded, 2,071 lbs.; loading per h.p., 4·14 lbs.; loading per sq. ft., 14 lbs.; speed range, 74-247 m.p.h.; gliding angle, 1 in 9; ceiling, 32,000 ft.; Duralumin tractor screw, 7 ft. 10 ins. dia. by 10 ft. pitch.

CORRESPONDENCE

[The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.]

SAFETY IN FLYING

[2074] I notice in the current issue of FLIGHT a letter on the important subject of safety in flying by Mr. W. E. Gray.

May I again encroach on your space to point out what I imagine would be a fault and perhaps a dangerous one, in the method suggested by him ?

He suggests that the A.S.I. should be marked with a red line or coloured sector, so that the pilot could at once realise when his machine was approaching stalling speed. This, I think, might prove to be a danger owing to the fact that it is seldom that two machines of the same standard type are rigged alike. One pilot may report that a certain machine is " tail heavy " (it may seem like that only to him). If the tail plane is set correctly the wings will be promptly re-rigged, and the " stalling speed " will vary accordingly, but the red line on the indicator will probably not be altered. The next pilot, if he relies solely on the indicator, may attempt to turn or land at a speed below the given minimum of the machine.

Then he won't fly any more !

ALAN H. CURTIS, Capt.

Golders Green.

IMPORTS AND EXPORTS, 1922-1923

AEROPLANES, airships, balloons and parts thereof (not shown separately before 1910). For 1910 and 1911 figures see " FLIGHT " for January 25, 1912 ; for 1912 and 1913, see " FLIGHT " for January 17, 1914 ; for 1914, see " FLIGHT " for January 15, 1915 ; for 1915, see " FLIGHT " for January 13, 1916 ; for 1916, see " FLIGHT " for January 11, 1917 ; for 1917, see " FLIGHT " for January 24, 1918 ; for 1918, see " FLIGHT " for January 16, 1919 ; for 1919, see " FLIGHT " for January 22, 1920 ; for 1920, see " FLIGHT " for January 13, 1921 ; for 1921, see " FLIGHT " for January 19, 1922 ; and for 1922 see " FLIGHT " for January 18, 1923.

	Imports		Exports		Re-Exports	
	1922.	1923.	1922.	1923.	1922.	1923.
	*	*	*	*	*	*
Jan. ..	1,152	466	76,552	60,079	23	280
Feb. ..	567	641	69,129	120,236	1,100	3,040
Mar. ..	1,471	589	166,607	71,945	100	689
April ..	3,846	8,508	139,995	167,757	5,880	462
May ..	2,416	845	167,999	55,427	4,254	728
June ..	816	1,433	129,137	141,381	14,530	1,410
July ..	1,039	192	24,405	62,025	—	1,334
Aug. ..	198	2,054	88,910	57,704	685	344
Sept. ..	3,043	578	71,508	39,069	44	106
	14,548	15,306	934,242	775,623	26,616	8,393

The Society of British Aircraft Constructors.

MR. C. R. FAIREY (Fairey Aviation Co., Ltd.) has been re-elected Chairman of the Society for the year 1923-24. Captain P. D. Acland (Vickers, Ltd.) and Sq. Com. James Bird (Supermarine Aviation Works, Ltd.) have respectively been re-elected Deputy Chairman and Hon. Treasurer. The other members of the Committee of Management for the year are Mr. Robert Blackburn (Blackburn Aeroplane and Motor Co., Ltd.), Mr. R. A. Bruce (Westland Aircraft Works (Petters, Ltd.)), Mr. A. E. L. Chorlton, C.B.E. (Wm. Beardmore and Co., Ltd.), Mr. Basil Johnson (Rolls-Royce, Ltd.), Mr. John Lord (A. V. Roe and Co., Ltd.), Mr. F. Handley Page, C.B.E. (Handley Page, Ltd.), Mr. E. B. Parker (Short Bros. (Rochester and Bedford), Ltd.), Mr. T. O. M. Sopwith (H. G. Hawker Engineering Co., Ltd.), Mr. A. E. Turner (The de Havilland Aircraft Co., Ltd.), Mr. H. T. Vane, C.B.E. (D. Napier and Sons, Ltd.) Sir Henry White-Smith, C.B.E. (Past Chairman (Bristol) Aeroplane Co., Ltd.).

The Fraser Flying School

ALEXANDER FRASER, who opened a " Flying School " at Kingsbury, and Hendon, a little time back, was sentenced at the Middlesex Sessions on October 6 to eighteen months' imprisonment with hard labour, having been found guilty of obtaining money by false pretences. Evidence was given that the accused man professed to run a " School of Flying " at the Kingsbury aerodrome, and later at Hendon. He possessed two aeroplanes, which were not paid for, and on the representation that the business was a prosperous one, coupled with promises of employment and interest on their money, he induced some six men to invest sums varying from £100 to £200 in the business.

THE SOCIETY OF MODEL AERONAUTICAL ENGINEERS

ON Saturday, October 13, a large party of the members visited the Light 'Plane Competitions at Lympne Aerodrome. They went there by motor, starting from Trafalgar Square at 8.30 a.m. After spending a most enjoyable day, thanks to the excellent arrangements that were made, the party arrived back at 10.15 p.m., having gained a great deal of useful knowledge.

On Saturday, October 20, at 2.30 p.m., thanks to the kindness of the De Havilland Aircraft Company, Ltd., members will meet on the Stag Lane Aerodrome, Edgware, Middlesex, to compete for the *Model Engineer's* Challenge Cup, also to make attempts on the general records.

On Thursday, October 25, at 7.30 p.m., a Meeting will be held in the British Empire Room, Y.M.C.A. Building, Tottenham Court Road, London, W.C. 1. Subject : Discussion on low-powered aeroplanes.

All communications should be addressed to the Hon. Sec., A. E. Jones, 48, Narcissus Road, West Hampstead, N.W. 6.

A. E. JONES, Hon. Sec.

SIDE-WINDS

As usual, Smith's aviation instruments were once again to the fore in the Light 'Plane Competitions just closed at Lympne. Each of the prize-winning machines was fitted with Smith's airspeed indicator, altimeter, etc. All these instruments were of a light pattern specially designed for use on light 'planes, or gliders.

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ANOTHER item contributing towards the success achieved by the prize-winners in the Light 'Plane Competition—and a very important one, too—was the fuel used. This, it may be of interest to note, was the popular " B.P." spirit, produced by the British Petroleum Company, Ltd.—the winners in all classes employing this fuel.

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TITANINE dope was very much to the fore in the Light 'Plane Competitions at Lympne, as may be seen from the following list of machines entered which were doped with this particular " brand " : James's A.N.E.C. (No. 17), the three Avros (Nos. 5, 6, 11), the two D.H.'s (Nos. 8, 12), the Gloucestershire " Gannet " (No. 7), the R.A.E. Aero Club's " Hurricane " (No. 14), the Sayers-Handley Page (No. 25)—the other two S.H.P. machines (Nos. 23 and 26), which did not put in an appearance, were also so doped—and the two " Wrens " (Nos. 3, 4).

PUBLICATIONS RECEIVED

Revue Juridique Internationale de la Locomotion Aérienne. October, 1923. Edition Aérienne, 4, Rue Tronchet, Paris.

Official Gazette of the United States Patent Office. September 25, 1923. United States Patent Office, Washington, D.C., U..S.A

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations : cyl. = cylinder ; I.C. = internal combustion ; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

APPLIED FOR IN 1922

Published October 11, 1923

16,347. J. MICHAUD. Vertical-rising flying-machine. (203,776.)
16,365. F. VINCENT. Rotary engines. (203,779.)

Published October 18, 1923

8,088. F. W. SCARFF. Gun mountings for aircraft. (204,070.)
11,420. H. A. BERLINER. Helicopters. (204,079.)
17,568. VICKERS, LTD., and O. H. E. VICKERS. Air-pressure operated mechanism for aircraft. (204,138.)
17,584. VICKERS, LTD., and O. H. D. VICKERS. Fore and aft control of aircraft. (204,139.)
27,069. H. MICHEL. Two-stroke cycle I.C. engines having stationary cylinders and cam-controlled revolving parts. (204,220.)

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